

Peer Review

RCCAC-ENG-G-601

Rev. 1.2

Rockwell Collins CETC Avionics Co., Ltd.

Approval

| | Name | Title | Approval | Date |
|--------------|-----------------|----------------------|----------|------------|
| Prepared by: | Di Zhang | Sr. Quality Engineer | On File | 09/18/2017 |
| Reviewed by: | James Zhang | Quality Manager | On File | 09/26/2017 |
| Approved by: | Richard Hackett | CTO | On File | 09/26/2017 |
| Approved by: | Wang Yifei | GM | On File | 09/26/2017 |

Revision History

| Revision | Originator | Description | Date |
|----------|-------------------------|---|------------|
| 1.0 | Sun Xiaobin Di Zhang | New Release | 06/26/2015 |
| 1.1 | James Zhang | Added the Signature column in the Approval page | 10/12/2015 |
| 1.2 | Di Zhang | Updated based on DAC Mary's feedbacks: (1) In Scope section updated "DO-178B" as "DO-178B/C"; (2) In Peer Review Overview section added "And for each project the Google sheet based peer review records shall be stored as part of the project verification data"; (3) In Table 1&2&3, updated Quality is "R" for Test Result related review; (4) In Table 3, updated Quality is "I" for IDD review; (5) Updated section reference throughout the document, e.g. section 5.5 to 3.5, section 4 to 2.3, etc.; (6) In section 3.2.1 added "rationale why the finding is Non-Issue shall be documented", and added a bullet "the Reviewer checklist has been completed"; (7) In section 3.2.2 added "rationale why the finding should not be Assigned shall be documented"; (8) In section 3.2.2 reworded "to consider" to "to require"; (9) In section 3.3.4 added "or Main Reviewer"; (10) In section 3.4 removed the word "only", and added statement "In addition, any revert shall | 09/18/2017 |

| | | | |
|--|--|--|--|
| | | <p>be approved from Quality and Engineering Manager or Technical Project Manager”;</p> <p>(11) Added section 3.5.1.3.2 Verified, and renumbered the rest section number 3.5.1.3.X;</p> <p>(12) In section 3.5.1.3.3 added “The rationale why the finding is Cancelled shall be documented”;</p> <p>(13) Added “Verified” state for Figure 1;</p> <p>(14) In section 3.5.1.4.6 reworded “should be used” to “is required”;</p> <p>(15) In Table 5 marked Producer Checklist & Leader Checklist as “Optional”, Reviewer Checklist as “Required”;</p> | |
|--|--|--|--|

Table of Content

| | | |
|----------|--|-----------|
| 1 | INTRODUCTION | 7 |
| 1.1 | PURPOSE | 7 |
| 1.2 | APPLICABILITY..... | 7 |
| 1.3 | REQUIREMENTS IMPLEMENTATION..... | 7 |
| 1.4 | INDUSTRIAL STANDARDS | 7 |
| 1.5 | COMPANY DOCUMENTATION | 7 |
| 1.6 | DEFINITIONS OF ACRONYMS & TERMS | 7 |
| 1.7 | SCOPE | 8 |
| 2 | PEER REVIEW OVERVIEW..... | 8 |
| 2 | ROLES AND RESPONSIBILITIES..... | 9 |
| 2.1 | DEFAULT ROLES..... | 9 |
| 2.2 | SPECIALTY ROLES..... | 10 |
| 2.3 | PARTICIPANT SELECTION | 10 |
| 2.3.1 | RELEASE REVIEWS | 12 |
| 3 | PEER REVIEW PROCESS | 12 |
| 3.1 | CREATE THE REVIEW – DRAFT STATE..... | 13 |
| 3.1.1 | COPY THE TEMPLATE TO THE CORRECT FOLDER..... | 14 |
| 3.1.2 | COPY APPROPRIATE CHECKLIST TO THE PEER REVIEW SHEET | 14 |
| 3.1.3 | FILL OUT THE COVER PAGE | 15 |
| 3.1.4 | SCHEDULE THE PEER REVIEW AND STATE TRANSITION TO PENDING | 16 |
| 3.2 | CONDUCT THE REVIEW – PENDING & ACTIVE STATES | 16 |
| 3.2.1 | DESK REVIEW | 16 |
| 3.2.2 | MEETING REVIEW | 17 |
| 3.2.3 | CHECKLISTS TAB..... | 18 |
| 3.2.4 | PARTICIPANTS LIST | 18 |
| 3.2.5 | FINDINGS TAB | 18 |
| 3.2.6 | ARTIFACTS STATUS..... | 18 |
| 3.2.7 | STATE TRANSITION TO COMPLETE | 19 |
| 3.3 | COMPLETE THE REVIEW – COMPLETED AND CLOSED STATES..... | 19 |
| 3.3.1 | CHECKLISTS TAB..... | 19 |
| 3.3.2 | FINDINGS TAB | 19 |

| | | |
|-------------|--|----|
| 3.3.3 | ARTIFACTS VERSION | 19 |
| 3.3.4 | STATE TRANSITION TO CLOSED | 19 |
| 3.4 | REVERTING THE STATE OF A PEER REVIEW | 19 |
| 3.5 | FINDINGS..... | 20 |
| 3.5.1 | LIFECYCLE OF A FINDING | 20 |
| 3.5.1.1 | STATES OF A FINDING..... | 20 |
| 3.5.1.1.1 | DRAFT..... | 20 |
| 3.5.1.1.2 | ASSIGNED | 20 |
| 3.5.1.1.3 | IMPLEMENTED | 20 |
| 3.5.1.1.4 | VERIFIED | 20 |
| 3.5.1.1.5 | CLOSED | 20 |
| 3.5.1.1.6 | CANCELLED | 21 |
| 3.5.1.2 | TRANSITIONS..... | 21 |
| 3.5.1.2.1 | CHANGE REQUESTED | 22 |
| 3.5.1.2.2 | CHANGE IMPLEMENTED..... | 22 |
| 3.5.1.2.3 | CHANGE REJECTED..... | 23 |
| 3.5.1.2.4 | DUPLICATE..... | 23 |
| 3.5.1.2.5 | NON-ISSUE | 23 |
| 3.5.1.2.5.1 | QUESTION RESULTING IN NO ACTION | 23 |
| 3.5.1.2.5.2 | ISSUE FOUND NOT TO EXIST..... | 23 |
| 3.5.1.2.5.3 | FINDING OPENED BY MISTAKE | 23 |
| 3.5.1.2.6 | CHANGE VERIFIED | 23 |
| 3.5.2 | WHAT SHOULD GO INTO A FINDING? | 24 |
| 3.5.2.1 | GOOD EXAMPLES | 24 |
| 3.5.2.2 | BAD EXAMPLES..... | 24 |
| 3.5.3 | TYPOGRAPHICAL/TRIVIAL CHANGE FINDINGS..... | 25 |
| 3.5.4 | PEER REVIEW PROCESS FINDINGS..... | 25 |
| 3.5.5 | WHAT SHOULD GO INTO A RESOLUTION?..... | 26 |
| 3.5.5.1 | GOOD EXAMPLES | 26 |
| 3.5.5.2 | BAD EXAMPLES..... | 26 |
| 4 | CHECKLISTS..... | 27 |
| 4.1 | PRODUCER CHECKLIST | 27 |

| | | |
|-----|-------------------------------------|----|
| 4.2 | REVIEWER CHECKLIST..... | 28 |
| 4.3 | LEADER CHECKLIST | 28 |
| 5 | PEER REVIEW SHEET ENTRY FIELDS..... | 28 |

List of Table

| | | |
|-----------|--|----|
| Table 1-1 | Referenced Industrial Standards | 7 |
| Table 1-2 | Referenced Company Documentation | 6 |
| Table 1-3 | Acronyms..... | 6 |
| Table 2-1 | System Teams..... | 10 |
| Table 2-2 | Hardware Teams | 11 |
| Table 2-3 | Software Teams | 11 |
| Table 3-1 | Peer Review States..... | 11 |
| Table 5-1 | Peer Review Form Entry Guide | 28 |

1 Introduction

1.1 Purpose

To describe how Peer Review may be applied to design activities and artifacts without overburdening the design teams.

1.2 Applicability

Location: Rockwell Collins CETC Avionics Co., Ltd. (hereafter referred to as “RCCAC”), Chengdu, Sichuan, China

1.3 Requirements Implementation

This guidance meets the requirements for Peer Review as defined in AS9100: 2016 and ISO 9001: 2015.

1.4 Industrial Standards

Table 1-1 Referenced Industrial Standards

| Standard | Description |
|---------------|--|
| AS9100: 2016 | Quality Management System – Requirements for Aviation, Space and Defense Organizations |
| ISO9001: 2015 | Quality Management Systems – Requirements |

1.5 Company Documentation

Table 1-2 Referenced Company Documentation

| Document # | Description |
|-----------------|----------------|
| RCCAC-QMS-P-000 | Quality Manual |

1.6 Definitions of Acronyms & Terms

Table 1-3 Acronyms

| Acronym | Definition |
|---------|---|
| RCCAC | Rockwell Collins CETC Avionics Co. Ltd. |
| CCB | Change Control Board |
| CPCI | Computer Program Configuration Index |
| CR | Change Request |
| DAC | Design Assurance Center |
| DOORS | Dynamic Object Oriented Requirements System |
| EPA | Engineering Project Assistant |
| HAS | Hardware Accomplishment Summary |
| HDP | Hardware Design Plan |
| HVPR | Hardware Verification Procedures & Results |
| HV&VP | Hardware Verification & Validation Plan |
| ID | Identification |
| IDD | Interface Definition Document |

| | |
|-------|--|
| N/A | Not Applicable |
| PSAC | Plan for Software Aspects of Certification |
| RC | Rockwell Collins |
| REV | Revision |
| SAS | Software Accomplishment Summary |
| SCID | Software Configuration Index Drawing |
| SCL | Software Control Library |
| SDP | Software Development Plan |
| SVP | Software Verification Plan |
| SVPR | Software Verification Procedures & Results |
| SysDP | System Development Plan |
| SysVP | System Verification Plan |

1.7 Scope

This document details Rockwell Collins CETC Avionics Company (RCCAC) processes for peer review activities. This will ensure all projects using this process will have a consistent, repeatable peer review process, which meets the objectives of DO-178B/C, DO-254, and ARP-4754A.

2 Peer Review Overview

A peer review is a close and critical evaluation of a work product (i.e. artifact) for compliance with standards and originating requirements. The goal of the peer review is to discover and correct defects at the earliest detection point in the product life cycle. It is expected the peer review process is a final check to ensure issues with the artifacts have been resolved; with few exceptions, issues should be detected and addressed by the use of good engineering practices and available tools. The efficient performance of peer reviews which detect quality defects requires trained and/or experienced peer review leaders. This process is not intended to take the place of that training or experience. A project's development plan will identify the life cycle data which is required to be peer reviewed. At a minimum, a peer review must be performed on all initial implementations of, and subsequent baselines of, that life cycle data. This may include requirements documents or modules, process documents, design, schematic and assembly drawings, implementation, verification documents, etc.

An approved Change Request (CR) is assumed to exist as a change driver for all non-initial baselines of any life cycle data requiring configuration control. The given project's Change Control Method would further specify any required change control processes. Artifact modifications driven by multiple CRs cannot be reviewed with a single peer review unless approved by the Project Engineer.

Peer review tool(s) will be used by RCCAC to record and control the project requirements, test cases, test procedures, codes, and other artifacts.

Before tool(s) are in place, RCCAC shall use peer review sheet (Google sheet) as the peer review tool for each project. And for each project the Google sheet based peer review records shall be stored as part of the project verification data. This document will be updated to document the new peer review process when RCCAC transitions to formal peer review tool(s).

2 Roles and Responsibilities

This section describes the roles for participants in a peer review. The producer is responsible for assignment of roles at the time of peer review creation and must ensure adequate independence and diversity of Reviewers based on the artifacts under review. In addition, there must be adequate technical expertise among the participants. Participants shall be selected based on their technical expertise and disciplines in order to complete a comprehensive review of the artifacts.

2.1 Default Roles

The Producer of the artifact(s) under review is responsible for facilitating the completion of the peer review activities. A Reviewer is responsible for reviewing the artifact(s), identifying defects, ensuring the review process has been followed, and participating in a Meeting Review (if scheduled). Individuals are selected to participate in the peer review in one or more of the following roles:

- **Producer:** Creates the artifact under review and prepares the material to be reviewed. Completes the Producer Checklist, answers questions during the review meeting, and is the main implementer of the findings.
- **Recorder:** This role is reserved for a member of the engineering support staff. The Recorder is not a Reviewer of the artifact under review. However, the Recorder can be assigned as the implementer for non-technical findings, such as spelling, grammar, and formatting.
- **Leader:** This may be an Engineering Manager, Project Engineer or Technical Lead who is tasked with technical and process management of the project. The Leader ensures the peer review is completed in a timely manner, all applicable processes have been followed, and fills out the Leader Checklist. The Leader may also fill out the Producer Checklist, if needed.
- **System Reviewer:** This is a Reviewer of the artifacts for defects from a system perspective. This will include addressing system concerns and needs which potentially can drive lower level changes.
- **Hardware Reviewer:** This is a Reviewer of the artifacts for defects from a hardware perspective. This will include addressing concerns involving potential hardware requirement, design, implementation, or verification changes. Some teams may choose to further distinguish between team members by classifying those in a verification role as a Verification Reviewer and those in a development role as a Hardware Reviewer. We will use the term Hardware Reviewer throughout this document to cover an individual in either of these roles.
- **Software Reviewer:** This is a Reviewer of the artifacts for defects from a software perspective. This will include addressing concerns involving potential software requirement, design, implementation, or verification changes. Some teams may choose to further distinguish between team members by classifying those in a verification role as a Verification Reviewer and those in a development role as a Software Reviewer. We will use the term Software Reviewer throughout this document to cover an individual in either of these roles.
- **Quality:** This is a Reviewer who ensures compliance to the project's processes and plans. An individual listed in the role of Quality must be a member of RCCAC Quality team, which is independent from the project's engineering team. The quality is responsible for review closeout.
- **Safety:** This is a Reviewer of the artifacts for safety impacts to the system.

2.2 Specialty Roles

The following are additional roles which will further clarify a participant's responsibility in the review:

- **Main Reviewer:** This is a mandatory (i.e. required) role for all peer reviews. At least one participant must be identified as the Main Reviewer. A participant marked as a Main Reviewer will also be classified with one of the Reviewer roles above. A Main Reviewer will also be responsible for completing the Reviewer Checklist. If there are multiple Main Reviewers in a peer review, the Main Reviewers will mutually decide who will complete the Reviewer Checklist. This role shall not be a dual role with the Producer role.
- **XXX Domain:** This is an optional role which identifies the technical domain the Reviewer is representing. When used, 'XXX' should be replaced with the domain name. This role will only be used when participation external to the project team is required for the artifact(s) under review.

Domain roles will only be added as necessary. The Producer of a review requesting an individual be added to the peer review with "XXX Domain" role will coordinate with the Leader and the engineering support staff to create the appropriate role and set it as the default role for the intended participant.

2.3 Participant Selection

The Producer is responsible for selecting appropriate participants for the peer view. At a minimum, each review will have one participating Main Reviewer. The peer review should be focused on a quality examination of the artifacts and not on a specific number of participants. Refer to tables below for the list of participants who should be involved in the peer review, according to the type of artifact under review. A project's planning documents should specify 1) any additions to these tables and 2) any requirements stricter than those listed here (e.g. this document states a participant is to be involved, but the project desires the participant to be Required).

This listed items are the common life cycle artifacts for a project. Some project teams may include additional artifacts; any additional artifacts should be identified in their respective planning documents.

Table Key:

R – Indicates participation is **required**; the review cannot be conducted without the individual's participation.

I – Indicates an **invitation** to participate is required; participation is not required.

O- Indicates an invitation and participation are **optional**; discretion of the Producer or Leader will determine if these Reviewers are to be involved.

Table 2-2: System Teams

| Reviewers | Producer | Leader | Systems Reviewer | Hardware Reviewer | Software Reviewer | Quality | Safety | Recorder |
|--|----------|--------|------------------|-------------------|-------------------|---------|--------|----------|
| Type of Artifact Reviews | | | | | | | | |
| Process Document | R | R | R | R | R | R | I | O |
| System Development Plan (SysDP) & System Verification Plan (SysVP) | R | R | R | I | I | R | I | O |

| | | | | | | | | |
|---|---|---|---|---|---|---|----------------|---|
| System Requirements & System Design Document | R | I | R | I | I | I | I ¹ | O |
| System Verification Test Cases, System Verification Test Procedures, & System Verification Test Results | R | I | R | O | O | R | O | O |
| System Verification Summary, System Validation Summary, & System Accomplishment Summary | R | R | R | O | O | R | R | O |
| Users Guide | R | R | R | I | I | I | O | O |

Table 2-3: Hardware Teams

| Reviewers | Producer | Leader | Systems Reviewer | Hardware Reviewer | Software Reviewer | Quality | Safety | Recorder |
|---|----------|--------|------------------|-------------------|-------------------|---------|----------------|----------|
| Type of Artifact Reviews | | | | | | | | |
| Process Document | R | R | R | R | R | R | I | O |
| Hardware Design Plan (HDP), Hardware Verification and Validation Plan (HV&VP), & Plan for Hardware Aspects of Certification (PHAC) | R | R | I | R | I | R | I | O |
| Hardware Design Standards | R | I | I | R | I | I | I | O |
| Hardware Requirements | R | I | I | R | I | I | I ¹ | O |
| Hardware Test Procedures, & Hardware Test Results | R | I | O | R | O | R | O | O |
| Detailed Design Data | R | I | I | R | I | I | I ¹ | O |
| Hardware Verification Procedures & Results (HVPR) (i.e. verification summary for formal release), Hardware Accomplishment Summary (HAS) | R | R | O | R | O | R | R | O |
| User Guide | R | R | O | R | O | I | O | O |

Table 2-4: Software Teams

| Reviewers | Producer | Leader | Systems Reviewer | Hardware Reviewer | Software Reviewer | Quality | Safety | Recorder |
|--|----------|--------|------------------|-------------------|-------------------|---------|--------|----------|
| Type of Artifact Reviews | | | | | | | | |
| Process Document | R | R | R | R | R | R | I | O |
| Software Development Plan (SDP), Software Verification Plan (SVP), & Plan for Software Aspects of Certification (PSAC) | R | R | I | I | R | R | I | O |

| | | | | | | | | |
|--|---|---|---|---|---|---|----------------|---|
| Software Requirements & Design | R | I | I | I | R | I | I ¹ | O |
| Code | R | I | O | O | R | I | O | O |
| Software Verification Test Cases, Software Test Procedures, & Software Test Results | R | I | O | O | R | R | O | O |
| Software Configuration Index Drawing (SCID) & Computer Program Configuration Index (CPCI) | R | I | O | O | R | R | O | O |
| Interface Definition Document (IDD) or any documents which expose S/W interfaces to external users | R | I | I | I | R | I | I | O |
| Software Verification Procedures & Results (SVPR) (i.e. verification summary for formal release), Software Validation Summary, & Software Accomplishment Summary (SAS) | R | R | O | O | R | R | R | O |
| User Guide | R | R | O | O | R | I | O | O |

¹ If there will be numerous iterative peer reviews on a given requirements document, it may be more practical to hold a separate review for the Safety team when the document is considered complete. In that case, Safety would be Optional on the iterative reviews and Required on the separate safety review.

2.3.1 Release Reviews

A Release Review is a final peer review prior to submitting an artifact to the Software Control Library (SCL). The intent of a Release Review is to review the artifact for formatting, and not necessarily for technical content (unless the Producer has clearly described the scope of review as for both technical and release purposes).

The minimum set of required participants for a Release Review is the individuals on the approval block of the artifact (e.g. Quality for all artifacts, Safety for certain artifacts). If the Producer is the only engineer of the project team on the approval block, a peer must be a required participant in the peer review and act as Main Reviewer. Additionally, the Recorder is a required participant on a Release Review.

The checklists required in a typical Release Review differ from a Release Review covering technical content, as well. A typical Release Review requires the Focal Point checklist and the Producer General questions (as described further into this document). The other checklists discussed in this document are required when technical content is being reviewed.

3 Peer Review Process

A peer review moves through several stages during its lifetime. Each stage has certain entry criteria, associated actions, and exit criteria. Generally, peer reviews are created, conducted, and then

completed. The RCCAC peer review sheet defines several states associated with these stages as follows:

Table 3-1: Peer Review States

| Peer Review Stage | Peer Review Sheet State | | Associated Activities |
|-------------------|-------------------------|----------|--|
| Create | DRAFT | | Data population, role assignment, artifact and reference collection, and completion of Producer Checklist. |
| Conduct | PENDING | | Examination of artifacts and creation of findings. |
| | ACTIVE | | Peer review meeting is conducted (if applicable). Completion of Reviewer Checklist. |
| Complete | COMPLETED | RESOLVED | All findings implemented. |
| | | VERIFIED | All findings verified and completion of Leader Checklist. |
| | CLOSED | | Peer View Sheet data archived. |

The sections below provide the specific details for each stage of the peer review, including actions, entry criteria and exit criteria, and corresponding Peer Review Sheet states and actions.

3.1 Create the Review – Draft State

Prior to creating a peer review, the Producer determines the number of artifacts to be covered in a single review and whether a Desk Review is appropriate or a Meeting Review is required. A Desk Review is appropriate for limited and localized changes and is also allowed for all Release Reviews. A Meeting Review shall be conducted when one or more of the following criteria is true:

- An artifact is new (i.e. an artifact that has no previously-released baseline).
- It is requested by the Leader, Technical Project Manager, or Engineering Manager.

If any participant requests a Meeting Review when a Desk Review was planned, a Meeting Review shall be scheduled and conducted.

The Producer ensures all artifacts being reviewed are under project configuration control and ensures the review package is compiled. The review package includes the specific artifacts being reviewed and associated reference material (see Section 3.1.X for References to be included).

The Producer identifies the review participants per Section 2.3 and determines the review date/time. A minimum of two working days should be allowed prior to the Meeting Review date/time or Desk Review due date/time. The review package size and the review participants' workload should be considered when determining the amount of review time needed. For example, if the package is large, more preparation time prior to the Meeting Review or Desk Review completion date may be needed. If all participants agree, the minimum review notice time may be reduced. If any participant does not believe an adequate review time has been allotted, the Producer should be consulted about moving the review date/time to allow for a thorough, quality review of the artifacts.

Peer reviews are typically created by the Producer. Peer reviews can also be created by the engineering support staff on behalf of the Producer, but it is preferred the Producer of the artifacts creates the review. The Producer Checklist shall only be completed by the Producer or Leader.

3.1.1 Copy the Template to the Correct Folder

Make a copy of the peer review sheet, and move the new peer review form to the correct folder. In the folder, a screenshot of the artifact(s) to be reviewed shall exist.

The Producer should have all appropriate artifacts for review added to the folder. A Current version and Previous version for the artifact should be identified. The Current version should be the version of the artifact which contains all of the changes under review, but no later changes. The Previous version should be the version of the artifact which contains none of the changes under review. If the artifact is new or if no previous review credit is being taken for a prior versions of the artifact (i.e. a full review of the artifact is to be completed by the Reviewers), then the Previous version should be none. All versions since the previous baseline (last formal release or initial baseline) should be covered by a review at the time the artifact is released.

For modifications to a Word document, it is recommended the Producer uses the Change Tracking feature, before making any changes to the document. This feature is used as an aid to the Reviewers, but it is not meant to replace a full, independent comparison between previous and current versions of the artifacts.

3.1.2 Copy Appropriate Checklist to the Peer Review Sheet

The Producer is responsible for adding the appropriate checklists (e.g. depending on the type of the artifact) to the peer review sheet. Please reference Section 4.X for the minimum questions to be included in the checklists. The project's development plan should reference the exact checklists to be used.

The artifact types are defined as follows. Additional artifact types may be used, any variations to this list should be specified in the project's planning documents.

- Planning: Artifacts containing planning information (e.g. Software Development Plan, Plan for Software Aspects of Certification).
- Requirements: Artifacts containing technical requirements (e.g. Software Requirements Specification, System Specification).
- Test: Artifacts containing test information, including test cases, test procedures, test scripts, test reports, analyses, and logs.
- Drawing: Hardware drawings, including part specifications and schematics.
- Code: Artifacts comprised of software code.
- Design Description: Artifacts containing design (e.g. Software Design Document, Interface Control Document, Enterprise Architect Model, etc.).
- Other: Artifacts that do not fill into any of the other Artifacts Types.

Producer Checklist

The Producer will complete the Producer Checklist while the peer review is in the Draft state. The intent of the checklist is to ensure the qualifications for the artifact(s) to enter into a peer review have been met. An additional intent of the checklist is to ensure easy-to-check items are completed prior to review, so that Reviewers' attention can be focused on a critical analysis of the material.

Reviewer Checklist

When the Producer selects an artifact type during the Draft state, the Reviewer Checklist required for that artifact type is also selected. The intent of the Reviewer Checklist is to ensure the reviewers are conducting the review per the proper criteria, such that an effective review of the material is performed. This checklist will not be completed by the Producer. It shall be completed by the Main Reviewer only after all required participants (and any optional participants who wish to participate) have completed their review, documented any and all findings, and those findings have been Assigned or Closed/Cancelled (i.e. moved out of Draft).

NOTE: Reviewer Checklists are not required for every peer review, with some examples being Release Reviews (unless technical content is being reviewed) and reviews of process documents. It is the Producer's responsibility to ensure any required Reviewer Checklists are added to the peer review sheet, per the project's development plan.

Leader Checklist

The Producer will also add the Leader Checklist. This checklist will be completed by the Leader during the Completed state of the peer review.

3.1.3 Fill Out the Cover Page

There are three sections in the cover page. The first section describes the peer review, including peer review ID, title of peer review, description of peer review. The peer review shall be registered in the peer review master sheet, and after the registration, a unique peer review ID will be assigned. Set review "Status" to Draft, set "Date Issued" to today's date, set Producer to the name who submit the review request, set Due Date, if the review is a Desk Review, the Producer will select a review due date/time. If the review is a Meeting Review, the Producer will select the date and time for the meeting.

The second section describes the artifact(s) to be reviewed, including artifact name, version and location. Set "Artifact Name" to the file name of the item under review, set "Version" to the CM version of the file, set "Location of Artifact" to the Folder where the file is located. In addition, the Producer should include any additional information relevant to the review - reference material, the reference name, version and location should be provided as well.

The third section lists identified peer reviewers and their roles. Please reference Section 2.3 for a list of invitees. Reviewers will be selected based on their skill set. The individual listed as the Verifier on the Change Task driving the modifications under review should be included in the set of Reviewers. It is possible an invited participant may become unavailable when the peer review has been advanced out of the Draft state. In this case, the Producer or Leader will be allowed to add a replacement participant and remove the initial participant. This is allowed when 1) the new participant can fulfill the same Role as the initial participant and 2) the peer review is not in the Completed or Closed state.

Regardless of additions/deletions to the participant list, the participant guidelines in Section 2.3 must be followed.

3.1.4 Schedule the Peer Review and State Transition to Pending

Once the peer review has met all requirements to transition from the Draft state, the review is advanced to Pending. The Producer will send a review notice to all participants, which contains the peer review identification number, and the scheduled time and location of the Meeting Review or the Due Date/Time of the Desk Review. For reviews that include customer participants, all applicable artifacts and review information (i.e. date, time, location, call in number, password, etc.) should be supplied in the review notice. For a Desk Review, the Producer could optionally send a calendar reminder to all participants of the Desk Review due date/time.

3.2 Conduct the Review – Pending & Active States

Once the peer review exists in the Pending state, Reviewers are expected to examine the artifacts under review and create Draft findings as necessary. The Reviewers need to read all information provided in the peer review and in the Change Request to understand the context of the modifications under review. The artifacts need to be examined for technical correctness and for compliance with questions in the Reviewer Checklist. If issues are identified, the Reviewers must create findings, using the guidelines for writing findings in Section 3.5.

NOTE: If the artifact under review is a Word document and Change Tracking was turned on, it is the responsibility of the Reviewer to ensure all of the changes to the artifact since the Previous version are reviewed. Change Tracking is an aid for review, but a Reviewer cannot trust that all changes were tracked in this manner.

3.2.1 Desk Review

For a Desk Review, the Reviewers should conduct their review and enter any findings prior to the Desk Review due date/time.

The Producer will monitor the peer review for findings while the participants are conducting a Desk Review. If the Producer agrees a finding is to be Assigned, an Implementer and Verifier are identified for the finding. Typically, the Implementer is the Producer and the Verifier is the Originator of the finding. If the Producer believes a Finding should not be Assigned, the Producer should collaborate with the Originator of the finding to reach consensus prior to marking Non-Issue for the finding. And rationale why the finding is Non-Issue shall be documented. For teams that are not co-located, this collaboration can be difficult, but effort should be made to include the Originator in the discussion. In absence of a consensus, the Leader should be consulted.

Note: at any point during a Desk Review, a participant may request a Meeting Review instead. This is useful in the case above where consensus on a Finding is difficult to achieve. This is a likely indication of an issue worth discussing among all participants of the review.

The peer review state is transition from the Pending state to the Active state when all Required Participants are checked in the invitee list.

The review may be advanced from Active to Completed when all of the following are true:

- all required participants have completed their review,
- the required fields have been completed,
- the Reviewer checklist has been completed, and
- the review due date/time has passed, or if before the review due date/time, the Producer has confirmation from optional participants they do not intend to participate.

The peer review state is transition from the Active state to the Completed state when Review Checklists are completed, and the Findings list must be advanced out of the Draft state.

3.2.2 Meeting Review

For a Meeting Review, the Reviewers should conduct their review and enter any findings prior to the Meeting Review date/time.

The Producer will monitor the peer review for findings while the participants are preparing for a Meeting Review. If the findings are straight-forward and non-controversial, the Producer may choose to begin working findings at this time. If the Producer believes a Finding should not be Assigned, the Producer should wait for the Meeting to determine consensus of the reviewing team. And rationale why the finding should not be Assigned shall be documented.

The peer review state is transition from the Pending state to the Active state when all Required Participants are checked in the invitee list.

Typically, the peer review would be advanced from the Pending state to the Active state at the beginning of the Meeting Review. **The actual Meeting Review is a review of existing findings, and it is not intended to be a complete walkthrough of all changes to the artifacts under review. It is expected that Reviewers will arrive at a Meeting Review prepared to discuss the findings they have created for the peer review.** If all of the required participants for a Meeting Review have not completed their review activities, the meeting should be rescheduled until such time as all required participants have participated.

During a Meeting Review, all of the findings are reviewed. The participants ensure the findings are clear, concise, and follow the guidelines for writing findings as described in Section 3.5. If the participants agree a finding is to be Assigned, an Implementer and Verifier are identified for the finding. Typically, the Implementer is the Producer and the Verifier is the Originator of the finding. Additional findings are allowed to be entered during the Meeting Review if new issues are identified through the Meeting Review discussions.

The following is a list of additional items to require when conducting a meeting review:

- The Producer should be prepared for the meeting to commence on time, with the required tools and artifacts open at the start of the meeting.
- If time allows, the Producer should review the findings prior to the meeting and prepare a position on each.

- If meeting consensus determines a resolution different than what was documented in the Finding Description, the agreed-upon solution should be documented in the finding's Proposed Solution field.

The peer review state is transition from the Active state to the Completed state when Review Checklists are completed, and the Findings list must be advanced out of the Draft state.

3.2.3 Checklists Tab

There will be a checklist specific to the artifact type under review (planning, requirement, design description, test, drawing, code and other). This checklist must be completed by the Main Reviewer after all reviewers have conducted their review and all findings have been advanced out of Draft. The Main Reviewer fills out the checklist as a summary for all reviewers, taking into account any non-compliance documented within those findings. When an item is marked "N/A" in a checklist, the Main Reviewer must indicate the reason the item is not applicable in the comments field. If an item is marked "No" in a checklist, the Main Reviewer must write a Finding or Change Request to address the deficiency (or ensure a Finding or Change Request already exists). The Finding # or Change Request # must be indicated in the comments field for that checklist item. If there are multiple CR#'s applicable to the deficiency, it is acceptable for the comment to point to the applicable verification results spreadsheet (e.g. Test Case Summary) instead of listing each CR.

3.2.4 Participants list

All required and any invited or optional participants who participated in the peer review must indicate their participation by filling the Participated List. The individual participants must be responsible for filling the list.

3.2.5 Findings Tab

Please reference Section 3.5 for full guidance on authoring, implementing and closing Findings.

3.2.6 Artifacts Status

Once any/all findings against the artifacts under review have been entered, the artifact Status must be determined. The Producer and Reviewers must determine, together, the status of the artifact. The Status choices are as follows:

- **Revise without Review:** This is defined when there are valid findings in a peer review that are easily understood and will not dramatically change the content of the artifact under review. These findings will be verified and another review will not need to take place.
- **Revise with Review:** This is defined when there are significant changes needed to the artifact. To ensure the correct intent is captured, a second review will be held after all the changes are made.

NOTE: The Producer should create another review for this artifact upon closure of the original review.

- **Accept:** An Accept status will occur when a peer review is held in which no findings were recorded against the artifact. The artifact is accepted as written and will not be changed.
- **Cancelled:** This status is used when an artifact has major issues. The issues are so severe that the artifact needs to be almost completely reworked or it is determined during the course of the review that this artifact should not be reviewed at this time. The findings and the peer review for the artifact will be cancelled.

3.2.7 State Transition to Complete

Once the peer review has met all requirements to transition from the Active state, the review should be advanced to the Completed state.

3.3 Complete the Review – Completed and Closed States

The Completed state indicates all necessary participants have completed their review and all findings against the artifacts under review have been written.

The following fields are required to be completed in order to transition from the Completed state to the Closed state: Checklists, Findings, Artifacts Version.

3.3.1 Checklists Tab

Once all findings have been Closed or Cancelled, the Leader Checklist will be filled out by the Leader of the peer review (Engineering Manager, Project Engineer, or Technical Lead, as identified in the Draft state of the peer review). The intent of the checklist is to provide a gate to ensure the Leader, who oversees the peer review process, has looked at the review and determined the artifacts were disposed correctly (i.e. version numbers and artifact status are accurate), the appropriate people were invited and/or participated, and the checklists were filled out correctly (i.e. any “No” or “N/A” responses have the appropriate commentary).

3.3.2 Findings Tab

All findings must be Closed or Cancelled prior to transition from the peer review Completed state. Please reference Section 3.5 for additional details on Findings.

3.3.3 Artifacts Version

The final version (resulting version) of each artifact must be identified once all findings are Closed or Cancelled.

3.3.4 State Transition to Closed

Once the peer review has met all requirements to transition out of the Completed state, the review is advanced to Closed state. Once Closed, no changes will be allowed, so care should be taken to ensure that all review activities have been completed successfully and correctly prior to closing the review. Typically, the Leader or Main Reviewer or Producer of the peer review completes this action.

After a Release Review is Closed, the peer reviewed artifact(s) can be submitted to the SCL.

3.4 Reverting the State of a Peer Review

A peer review can be reverted back to previous state if both of the following are true:

- No finding against an artifact under review exists.
- No Reviewer has marked their participation.

There is one exception to this rule: if an Engineering Manager or Technical Project Manager cognizant over the project has approved the state reversion, the above rule may be violated. If this exception is

allowed, the Producer shall ensure all participants of the peer review are notified of the reversion and the reason for it being required. If a new artifact was added after a state reversion, all participants must be notified of the new artifact for review. Instead of a peer review state reversion for a missing artifact, the preferred method would be to open a new peer review for the new artifact.

In addition, any revert shall be approved from Quality and Engineering Manager or Technical Project Manager.

3.5 Findings

3.5.1 Lifecycle of a Finding

3.5.1.1 States of a Finding

3.5.1.1.1 Draft

This is the initial state of a finding. The finding exists in this state upon creation.

3.5.1.1.2 Assigned

This state indicates the finding has been assigned to the designated implementer and verifier and will be worked by the implementer.

3.5.1.1.3 Implemented

This state indicates the finding has been implemented, which includes supplying the Resulting Version of the artifact. A Resolution has also been entered, describing in detail what updates were made as a result of this finding.

3.5.1.1.4 Verified

This state indicates the finding has been verified by the designated verifier.

3.5.1.1.5 Closed

This state indicates the finding is now Closed. It is an end state. This state is reached either as a result of a finding being implemented and verified, or it is reached as a result of the finding being declared a non-issue.

A Closed finding should never be reverted back to previous state. If an issue is later discovered where something is wrong with resolution of the finding, then a new finding should be created. Example: A change is made to the software as a result of the finding. The verifier agrees with the change and verifies it, but later, the verifier realizes there was a mistake with the implementation and that it should have been rejected. In this case, a new finding should be opened, referring back to this one and the error that was discovered. An exception to this would be if the data in the finding was tracked incorrectly, such as the wrong Work Version was used. In that case, the Engineering Manager or Technical Project Manager should be involved in the decision to revert the finding.

For any issues with the validity of a finding, where it is desired that no work should be done to one or more artifacts of this review (such as if a finding is opened by mistake, if a finding resulted in discussion that eventually resulted in the finding requiring no work, or if the finding is made against something other than an artifact attached to this review), the issue should be flagged as non-issue which will Close the issue. A proper description should be supplied indicating the reason for moving the finding to a non-issue. The implementer should collaborate with the Originator of the finding and reach consensus prior to setting the finding to a non-issue. Related to the supplied examples:

- For a finding opened by mistake: Simply have no artifacts marked, and indicate finding opened as a mistake.
- For a finding that was written that after discussion now has no work to be done: Have no artifacts marked, and summarize the discussion that resulted in this finding not requiring any work.
- For a finding written against an artifact not part of this review: Have no artifacts marked, and reference a CR that this issue will be worked under. The finding Originator should concur that a CR is now in place for the defined issue prior to agreeing the finding is a non-issue. The CR should reference the peer review and finding number, as well.

3.5.1.1.6 Cancelled

This state indicates the finding was determined to be a duplicate of another existing finding. Agreement should be reached at least between the Originator of the finding and the implementer prior to marking a finding as a duplicate.

A finding could also be moved to Cancelled if it was determined to be a non-issue, as described in the previous section. The preferred method is to mark Non-issue, but it is acceptable for the Cancel Finding option to be used instead. The rationale why the finding is Cancelled shall be documented.

3.5.1.2 Transitions

The following diagram shows the peer review sheet States where a finding may exist and introduces terms used to describe when a finding can transition between various States.

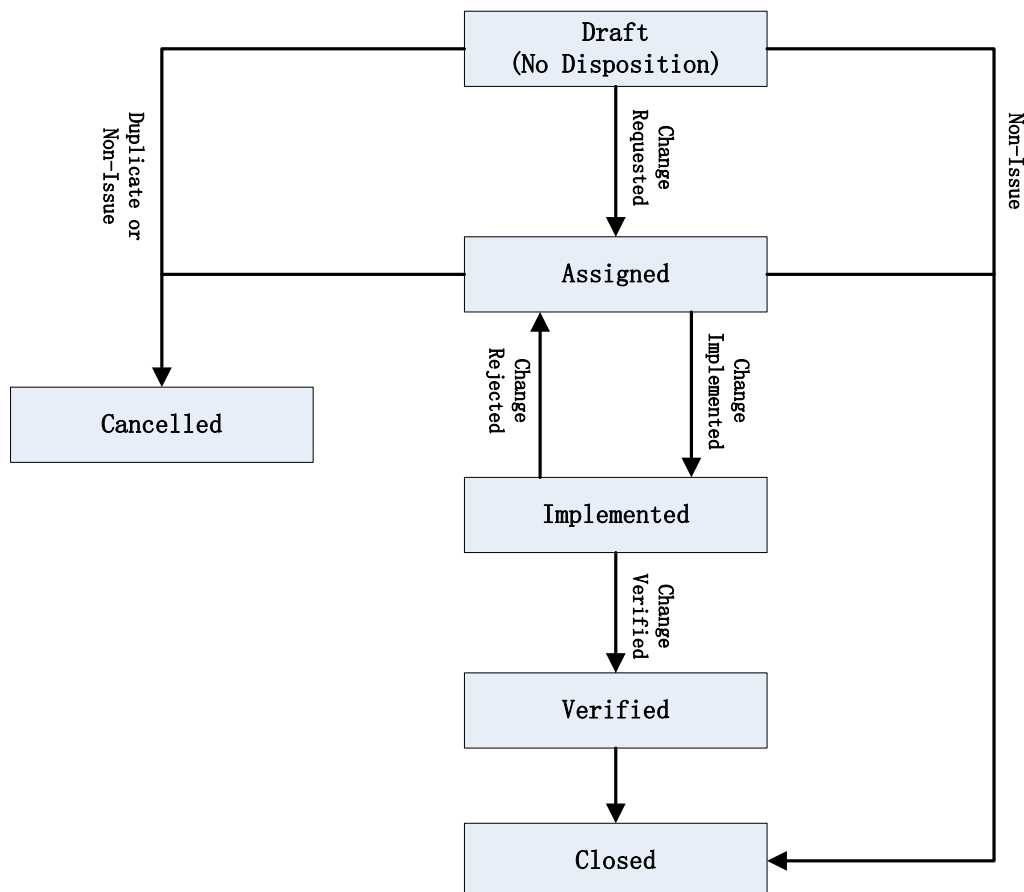


Figure 1: Finding State Transitions

3.5.1.2.1 Change Requested

The finding is advanced from Draft to Assigned. The Producer may choose to discuss the finding with the Originator, the leader, or any member or members of the review team. If someone other than the individual advancing the finding to Assigned has been identified as Implementer of the finding, the Producer should be responsible to send notice to the Implementer.

When the finding is advanced from Draft to Assigned, a Finding Status needs to be determined. Finding Status choices for advancing to Assigned are Issue and Trivial Issue:

- Issue – a finding that if left uncorrected, would prevent the artifact from fully meeting its purpose.
- Trivial Issue – a finding that does not constitute a flaw that causes the artifact to not meet its intended purpose and/or requirement(s), but is desired to be corrected and tracked to closure. Ideally, these types of issues have already been purged by the artifact Producer (it is acceptable for reviewers to communicate such concerns to the Producer to avoid overhead of processing this type of issue).

3.5.1.2.2 Change Implemented

The Implementer advances a finding from Assigned to Implemented when the Implementer has completed the finding. The Implementer shall notify the Verifier of the finding being Implemented.

3.5.1.2.3 Change Rejected

The Verifier of the finding rejects the change, sending it back to Assigned. Likewise, the Implementer of the finding may also revert the finding back to Assigned, thereby rejecting the previous change. The Verifier shall notify the Implementer of the finding being Rejected.

3.5.1.2.4 Duplicate

If it is agreed the finding is a duplicate of another finding, this transition is taken. This transition should not be done without the concurrence of the Originator or the Leader. The individual marking the finding as Duplicate should notice the Originator of the finding being marked as Duplicate.

3.5.1.2.5 Non-Issue

This transition is taken under a few circumstances listed below. The individual marking the finding as Non-Issue should notice the Originator of the finding being marked as Non-Issue.

3.5.1.2.5.1 Question Resulting in No Action

If the finding was written as a question for clarification, and if the Producer answers the question to the satisfaction of the Originator, then if no update is required, this transition is taken. The answer to the question is to be documented in the Comment field for the reason that the transition to Non-Issue was taken.

3.5.1.2.5.2 Issue Found Not to Exist

Another reason this transition is taken is if an issue was found, but after discussion it is found that either no issue was found, or that no change is needed. Take this transition, and indicate in the Comment field the rationale for it. The Originator (or Leader) should agree.

3.5.1.2.5.3 Finding Opened by Mistake

Another reason this transition is taken is if a finding was created by accident and is no longer needed.

3.5.1.2.6 Change Verified

The Verifier agrees the change that was implemented both matches the intended update and that the implementation was correct. The Verifier should also confirm that the versions listed in the finding (the Review, Working, and Resulting versions) are listed as correct. As a note, the following guidance is required in setting those versions:

- Review Version: Should match the version listed as Review Version for the artifact. Note: the Review Version may be modified as a later version.
- Working Version: Should be the latest version of the artifact just before the change was implemented. In a simple case, if only one finding exists against an artifact, the Working version would be the same as the Review version. If two findings were worked against the same artifact, it may be that the first finding was worked, using the Review version as the Working version, and that the first finding was then Implemented, creating a Resulting version of Review +1. When the second finding is worked, the Working version would be the Review +1 version, and when the second finding was Implemented, the Resulting version would be the Review +2 version. It would also be acceptable for both findings to be implemented in the same version, such that both

findings would list the Review version as the Working version and the Resulting version as Review +1.

- Resulting Version: Should be the first version that this finding was fully implemented in. It should be at least +1 from the Working version.

3.5.2 What should go into a Finding?

Begin with the location of issue. This needs to be focused on a specific area, or clearly described if it is a global change. If not obvious from the finding description, a proposed solution should also be provided.

Findings may have multiple actions in them, however these should be related activities and generally determined to be “atomic” actions (meaning, to do one of them, but not the other, would not make sense). An example would be a finding written like, “The system shouldn’t transition from State X to State Z without going through State Y. Therefore, object 1234 should be changed to say “Transition to State Y”, and then a new object should be added below this that indicates State Y will transition to State Z”.

If multiple, atomic actions are lumped together in a finding, a rule of thumb is to limit the actions to no more than 10 per finding.

A finding should generally be aimed at one implementer. If it will take two different implementers to make the update, it is likely two separate findings should be written instead.

Typographical and/or trivial changes may all be bundled into a single finding. Refer to Section 3.5.3 for guidance in this area.

When the finding can be tied back to a checklist violation, it is suggested the checklist item is referenced as part of the finding description.

If the Originator of the finding violates any of these guidelines, the Producer should request the Originator to modify the finding to align with guidelines.

3.5.2.1 Good Examples

“2568: The requirement should limit the value to 4, not 3, because there are only three options available to the user.” --- Object ID was listed, assumes only one artifact tagged in the finding.

“Global: Change the term ‘The security software’ to ‘The cryptographic software’.” --- A common term needs to be changed and the action requested is easy to understand.

3.5.2.2 Bad Examples

“This is not verifiable” --- no object(s) listed.

“I don’t think this software should be architected like this.” --- generic ... however, could exist as a flag to start a discussion in the peer review meeting, in which case this would then be non-issued with a

summary of the discussion or advanced to an Assigned finding with a description of what needs to change.

“Object 1234: The state listed here should be ‘X’ not ‘Y’. Also, object 2345 has some misspellings. While in there, why not add a new section that explains what State W is all about.” --- bad, because three independent issues are listed in just one finding. These are not considered atomic, as they are all fairly independent of each other.

3.5.3 Typographical/Trivial Change Findings

Typographical or Trivial changes generally should be contained to just one finding. These changes are considered meaningless to the overall content of the artifact and serve to improve the professional appearance and presentation of the artifact. However, in general, given the nature of these changes, no one will specifically go and verify that each instance of “hte” was changed to “the”, or that tabs were replaced with spaces, or extra linefeeds were removed.

A recommended method of flagging these errors would be transform artifact into Word, and flag the changes in a Word document using change tracking. This Word document should be attached as a Reference in the peer review, and a finding should be created with a pointer to the Reference document. Use of a Word document to mark changes is far more preferable than a long, drawn out explanation of where the error is. For example, trying to state, “In object 1234, in the third paragraph, second sentence, near the end, the second to last ‘an’ should be ‘a’.” is a bad idea.

Typographical/Trivial updates must ONLY be changes that make no changes to the meaning or intent of the document. This determination must be “beyond reasonable doubt”. If unsure at all, a finding should be written in place of that. An important note is that sometimes a typo is made, however that typo changes the meaning. In this case, the typo must have a finding to make the change. A simple example of this would be if the following three requirements existed:

- If the software receives a one, it shall display a blu circle.
- If the software receives a one, it shall display a green circle.
- If the software receives a three, it shall display a yellow circle.

In this case, it is quite obvious a copy-and-paste error was made in the second line, and it should have said “two” instead of “one”. However, since changing it to a “two” would change the meaning of the requirement, a finding must be used to make the change. On the other hand, in the first requirement, changing “blu” to “blue” is a typographical issue, as it is obvious what the intent is.

3.5.4 Peer Review Process Findings

If an issue was discovered against the process followed, a finding is added with no artifact attached.

Example of issues existing with the peer review (not limited to just this list):

- Description of the peer review is not complete or needs improvement or correction
- Producer checklist has an issue
- CR was not attached (or wrong CR was attached) to the peer review
- CR disposition was not filled out properly

- Wrong artifact or missing artifact attached to the peer review. Note: Depending on the nature of this, more actions may need to be taken. By definition, by not having the artifact in the review, Reviewers may not have reviewed it. The Leader should be involved in deciding what actions to take to ensure that the missing, or incorrectly marked artifacts, do undergo proper review. Please reference Section 3.4 for guidance on reverting the state of a peer review.

3.5.5 What should go into a Resolution?

When a finding is implemented, a Resolution should be entered, describing in detail the changes which were made as a result of the finding.

3.5.5.1 Good Examples

“Moved the test case 4.1.19 into section ‘4.2 – Code Inspection Verification Cases’ in the VC&P document. Now the test case number is 4.2.9.” --- The resolution provided both the old section number and the new section number, making it easy to verify the change.

“In section 3.3.2.8, entry criteria, added the following sentence ‘The software under test must also be under engineering developmental configuration control prior to starting this activity.’” --- The resolution identifies the location and the specific change made.

“In section 4.7, changed the text to ‘No source code will be developed at the module level. Any assumptions about the compiler will be described in the individual software application software plans.’ A reference was not added to the tools section for the tools used to load and configure the system, because this section is specific to the compiler.” --- The resolution provides the location of the change. In the last sentence, it also provides the reason a requested change was not made.

3.5.5.2 Bad Examples

“The code was updated.” --- The resolution does not provide the location of the change, nor a description of the changes made.

Finding text stated: “Object 2840 says ‘shall log a fault and when a single bit’. Remove ‘and’. Also, what type of fault should be logged: module fatal, VM fatal, or warning? This should be specified in the requirement.” Resolution stated: “Removed ‘and’.” --- The finding resolution did not address the second half of the finding. The resolution should explain why this was not added to the requirement.

“2374: Install entry point function flow chart modified accordingly.” --- It is good the object ID was included in the resolution, but the use of “accordingly” is too vague. The verifier has to search through the entire flow chart to figure out what changed. If this finding is audited, then the engineer supporting the audit has to perform a live review with the auditors to determine what changed.

“2942: requirement modified.” --- The object ID is included, but the resolution does not describe what the modification was.

4 Checklists

The following sections will list the minimum questions to be asked in the Producer, Reviewer, and Leader Checklists. When an item is marked “N/A” in a checklist, the individual must indicate the reason the item is not applicable in the comments field. If an item is marked “No” in a checklist, a Finding or Change Request must be written to address the deficiency. The Finding # or Change Request # must be indicated in the comments field for that checklist item. If there are multiple CR#’s applicable to the deficiency, it is acceptable for the comment to point to applicable verification results spreadsheet (e.g. Test Case Summary) instead of listing each CR. It is not expected a question in the Producer Checklist would result in an answer of “No”, as the response would indicate the review is taking place prematurely. Allowable exception: If an answer of “No” without a documented Finding or Change Request is believed to be necessary in a Producer or Reviewer Checklist, the Engineering Manager or Technical Project Manager cognizant over the project must have agreed. This agreement must be indicated in the comments field for that checklist item.

The project’s development plan will document the exact checklists to be used.

4.1 Producer Checklist

- Is there a CCB-approved Change Request for the artifacts under review, and is the CR listed in the References field of the review? Note: if this is a Release Review for a new part number (i.e. Rev -) or the artifact under review does not require change management, choose N/A and enter “No CR Required” as a Generic CR in the References field.
- Does the peer review’s Summary line follow the guidance in the Peer Review Process?
- Does the peer review’s Description follow the guidance in the Peer Review Process, including a description of the changes to be reviewed, instructions for reviewing the material, and tasks to be performed by the Reviewers?
- If there is a DOORs document under review, has the .pdf export been generated, stored, and attached to the Artifacts field per the Peer Review Process?
- Has the document been proofread, checked for misspellings, proper use of punctuation, correct grammar, and consistent use of terms, and have terms, acronyms, and abbreviations been defined? Note: it is often easier to detect these types of errors if the document is exported to Microsoft Word.
- Have the Reviewer Checklist(s) for the artifact type(s) under review been attached to the Checklists tab and left incomplete?
- Has the Leader Checklist been attached to the Checklists tab and left incomplete?
- Has the guidance in the Peer Review Process been followed in making the determination between Desk and Meeting Review?
- Have the questions listed in the Reviewer Checklist(s) for this review been considered and accounted for by the Producer?

NOTE: a project may choose to duplicate questions from the Reviewer Checklist(s) into the Producer Checklist, thereby removing the requirement for this question to be asked. The intent is to ensure any required entrance criteria and certification questions have been taken into account before the Producer enters the peer review.

4.2 Reviewer Checklist

- If a DOORS document is under review, create a Draft finding and advance to Assigned with the following attributes: 1) Implementer = Producer or Recorder of the review, 2) Verifier = Main Reviewer, 3) Artifacts = DOORS document and related .pdf, and 4) Description = "Once all other findings against the DOORS document have been Closed or Cancelled, incorporate all changes listed in _Proposed Change, Then, regenerate the .pdf for the DOORS document under review." Has the final DOORS document finding been created and assigned, as requested here?
- Additional questions should be added for any entrance criteria specified in the project's development plan.
- All certification (e.g. DO-178, DO-254, ARP-4754) checklist questions, related to the artifact type under review, must also be included in the Reviewer Checklist. The exact verbiage on these checklist items will be documented in the project's development plan.

4.3 Leader Checklist

Does the Leader concur with the results of the peer review?

5 Peer Review Sheet Entry Fields

The following table describes, in one location, the minimum fields that should be included in Peer Review Sheet.

Table 5-1: Peer Review Form Entry Guide

| Peer Review Form Entry | Mandatory? | Definition |
|------------------------|------------|--|
| Cover Page | | |
| Peer Review ID | Required | A unique ID, registered in the peer review master sheet. |
| Requester | Required | Person that requested the review be created. NOTE: when an EPA creates a peer review at the request of an engineer, the engineer should be listed as the Requester. |
| Target Close Date | Optional | This is a planned date for the peer review to be closed. |
| Description | Required | A detailed description of the peer review. The description provides sufficient detail about the peer review so that anyone can understand what the peer review encompasses and why the peer review is needed. If necessary, this should also include any special review instructions (e.g. "This review covers only section 3-8 of the module." or "This is the safety review of allocated safety requirements and derived requirements. Safety is to review those requirements and determine the correctness of the Safety attribute.") |
| Review Type | Required | A selection for the Desk Review or Meeting Review. |

| | | |
|-----------------------|-----------------------------|---|
| Meeting Date/Time | Required for Meeting Review | Date and Time the peer review meeting will be held. |
| Meeting Location | Optional | Location where the peer review meeting will be held. |
| Duration | Optional | Used to record how long a formal peer review meeting lasts. Initially this field would be populated before the review to document how long the meeting is expected to last. This field would then be updated, as needed, after the peer review takes place. |
| Desk Review Date/Time | Required for Desk Review | Date and Time the desk review should be complete. All findings should be entered prior to this date/time. |
| Participants | Required | List of team members invited to peer review the listed artifacts. The main reviewer should be marked. |
| Artifact Type | Required | Drop down menu selection of the different artifact types. |
| Artifact(s) | Required | A list of all modules, files, materials, etc. being reviewed. The requester may choose from artifacts currently available in the project configuration management tool. The review version, resulting version, and artifact status are required fields within the artifact. |
| Change Requests | Required | List of CRs associated with a specific peer review. |
| Reference | Optional | Any additional configuration management controlled reference material that will either aid a Reviewer during the peer review or is a required reference for proper review of the artifacts under review. |
| Findings Page | | |
| FID | Required | This is a Finding ID. |
| Originator | Required | The person requesting the action that resulted in a finding. |
| Finding Description | Required | This field provides sufficient detail about the finding so that the implementer can understand what the finding is and why the finding is requested/needed. |
| Proposed Solution | Optional | This field allows possible solution to be defined. |
| Date Created | Required | The date at which the finding is created. |
| Finding Status | Required | In a desk review, the Originator of the finding will decide what the status of the finding is. In a meeting review, the review team will decide what the status of the finding is. |
| Implementer | Required | The person responsible for implementing the change and for recording a description of the change made. |
| Verifier | Required | The person responsible for verifying the finding is completed satisfactorily. The verifier must be a different person than the implementer(s). |

| | | |
|--------------------|----------|---|
| Date Implemented | Required | The date at which the implementation effort for the finding is completed. |
| Date Verified | Required | The date at which the verification effort for the finding is completed. |
| Resolution | Required | A complete summary of the change/update made to implement the finding. |
| Checklists Page | | |
| Producer Checklist | Optional | |
| Reviewer Checklist | Optional | |
| Leader Checklist | Optional | |