DCA11MA076

Gulfstream Problem Reporting Process Description Document

(14 pages)

Gulfstream

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PROBLEM REPORTING PROCESS
DESCRIPTION DOCUMENT

DEPARTMENT:	681	TECHNICAL APPROVAL:	
SECTION:		TECHNICAL APPROVAL:	
PREPARED BY:		PROJECT ENGINEER:	
CHECKED BY:		MANAGER APPROVAL:	

REVISION APPROVAL

REV	REVISED BY	APPROVED BY	SIGNATURES	DATE
C	███████████	███████████	███████████	8/5/09
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REVISION HISTORY

REV	PARA	DESCRIPTION OF CHANGE
C	-	Convert to new standard report format.
		Modified the document to reflect updated Engineering PR Process.
		Removed snapshots of PR tool interfaces which are not valid anymore, the snapshots of interfaces are covered in Problem Reporting tool Guideline.

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1.0 PURPOSE

This document provides a Problem Reporting (PR) process description for the engineering department. The steps defined in this document describe the process to be followed when documenting and tracking system problems detected on various platforms. This document also defines the information that is required to be collected and stored in a database during the life cycle of the project.

2.0 SCOPE

The process described in this document applies, in whole or in part, to every engineering project undertaken in both hardware and software development.

2.1 Applicable Documents

2.1.1 GAC Documents

GER-7797 Problem Reporting System Specification

2.1.2 External Documents

RTCA/DO-178B Software Considerations in Airborne Systems and Equipment Certification dated Dec 1, 1992

3.0 GENERAL DESCRIPTION

Problem Reporting needs to be used in order to accurately record, track and correct issues detected during development and integration. In order for the problem reporting system to support these capabilities, it shall provide the following functions:

- Provide a database to track issues for various programs

- Track different kinds of issues within the system(detected problems, desired upgrades, design issues)

- Provide a search capability within the system

- Generate reports as needed with the capability to customize reports for desired details.

3.1 User Characteristics

The PR system shall provide the capability for different types of users to access the system. These users will be able to enter issues, provide analysis, solutions and testing results for an entered problem, monitor, track and close out a problem. The type of users and their function are listed in Table 1

TABLE 1 – PR SYSTEM USERS

User	Function User Performs in PR System
Submitter	Detects an issue and determines the type of issue.
Problem Report Review Board(PRRB)	Determines whether the issue has been correctly determined and what to do with the PR. It also will have control over closing the PR.
PDT Lead	Analyze the problem and assigns personnel to work on and test PR, as well as assigning a QA representative to review changes. PDT Lead is the responsible for the PR.
Cog	Engineer assigned to analyze a PR, determine solution, fix the issue, or work with the supplier on the issue.
Change Board	The members of the program change board include representatives from Engineering, Manufacturing, Flight Test, Quality, Procurement and Materials.

3.2   Problem Reporting Process

Figure 1 shows the process to be use when creating and tracking a specific PR.

A problem or issue is identified in one of the labs, test facilities or on an aircraft. The problem details are recorded and entered into the database.

The following subsection shall detail the process to be followed from the inception to closure of a PR, indicating the specific user for each stage of the process.
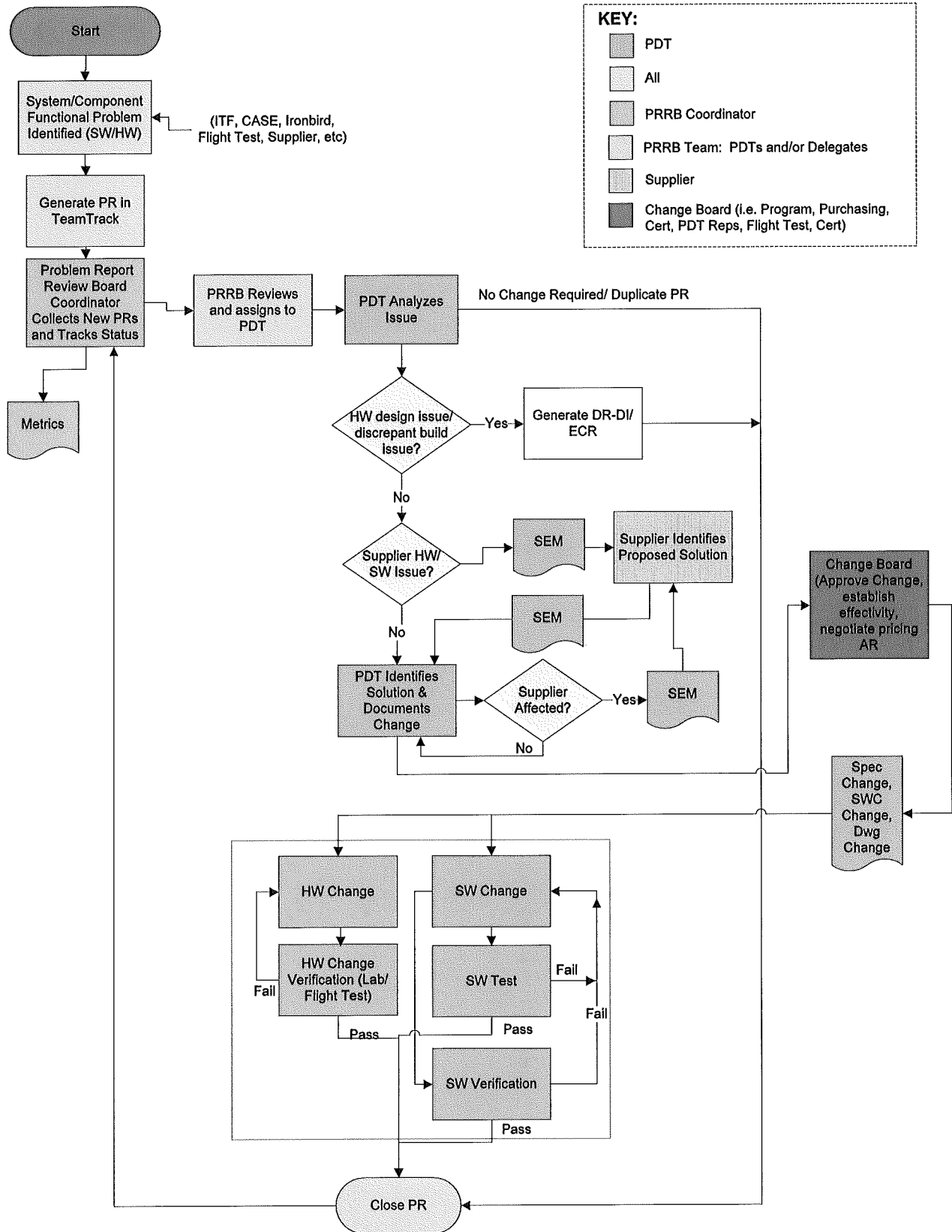
KEY:

- PDT
- All
- PRRB Coordinator
- PRRB Team: PDTs and/or Delegates
- Supplier
- Change Board (i.e. Program, Purchasing, Cert, PDT Reps, Flight Test, Cert)

Start

System/Component Functional Problem Identified (SW/HW) ← (ITF, CASE, Ironbird, Flight Test, Supplier, etc)

Generate PR in TeamTrack

Problem Report Review Board Coordinator Collects New PRs and Tracks Status

Metrics

PRRB Reviews and assigns to PDT

PDT Analyzes Issue → No Change Required/ Duplicate PR

HW design issue/ discrepant build issue? —Yes→ Generate DR-DI/ ECR

No

Supplier HW/ SW Issue? → SEM → Supplier Identifies Proposed Solution

SEM

No

PDT Identifies Solution & Documents Change

Supplier Affected? —Yes→ SEM

No

Change Board (Approve Change, establish effectivity, negotiate pricing AR)

Spec Change, SWC Change, Dwg Change

HW Change

SW Change

HW Change Verification (Lab/ Flight Test)

Fail

Pass

SW Test — Fail

Pass

Fail

SW Verification

Pass

Close PR

FIGURE 1 - PR PROCESS FLOW

3.2.1   Start (Submit PR)

When an issue is determined or detected, the engineer who detects the issue must enter into PR system as the submitter. The following information is required to submit a PR:

- Origin

- Owner PDT Group

- System

- SubSystem(If Applies)

- Problem Type

- Severity

- Description

- Design Effectivity

Once the PR has been entered, a number will be automatically assigned and used throughout the life of the PR.

3.2.2   PRRB Coordinator

The Program PR Review Board (PRRB) Coordinator monitors the database, collects and tracks new, open and closed PRs, issues reports with metrics on a weekly basis and chairs the PRRB (comprised of representatives from each PDT)

3.2.3   PRRB Reviews and Assigns to PDT

The PRRB assigns the responsible PDT to the PR, and also reviews closed PRs to ensure they have been properly resolved and documented.

3.2.4   PDT Analyzes Issue

The PDT Lead (or designee) will analyze the problem. The PDT will define if the problem is a hardware design issue or discrepant build issue and requires an ECR or DR/DI. Otherwise, the problem is investigated as either a GAC or Supplier issue until the root cause is found and a solution is identified.

3.2.5   Generate DR-DI/ECR

If the problem requires an ECR or DR/DI, the PR is closed once an ECR or DR/DI is opened.

3.2.6   Supplier Identifies Proposed Solution

If the solution requires supplier involvement, communication is documented by TCM / SEM and PDT lead assigns a Cognizant engineer as the responsible to monitor and updates PR status.

3.2.7   PDT Identifies Solution & Documents Change

The solution may be determined by the PDT / GAC Cognizant Engineer or the system / component supplier. The final solution and go forward plan is documented, the solution and associated data and information regarding effectivity, cost, etc. are submitted to the program change board for approval.

3.2.8   Change Board

After the final solution and go forward plan is documented, the solution and associated data and information regarding effectivity, cost, etc. are submitted to the program change board for approval.

3.2.9   HW Change

Once approval is obtained, the specification and hardware changes are implemented and verified in the lab or on the flight test aircraft.

3.2.10   HW Verification

The solution may undergo preliminary testing in the lab or on a test aircraft to validate the proposed solution.

3.2.11   SW Change

Once approval is obtained, the specification and software changes are implemented and verified in the lab or on the flight test aircraft.

3.2.12   SW Test

After changes have been made, the changes need to be tested. The Cognizant engineer who made the changes can perform the testing or someone else can perform the tests. If the testing fails, the PR must be updated and the engineer who made the changes will be notified to make correction and send the correction back for testing.

3.2.13   SW Verification

The solution may undergo preliminary testing in the lab or on a test aircraft to validate the proposed solution.

3.2.14   Close PR

Once verification is satisfactorily completed, the PR may be closed by the PDT Lead (following concurrence / approval of the PDT customers - Flight Ops and DER).

4.0   PROBLEM REPORTING ACCESS PRIVILEGES

To access the PR system, the user should obtain username and password from the PR system administrator. The users listed in Table 1 have differing roles and needs for accessing the system. Therefore, access to the system shall be different for each type of user. Table 2 lists the users and the privileges.

TABLE 2 - PR SYSTEM USERS ACCESS PRVILEGES

User	Access Privilege
Submitter	Submit any PR
Problem Report Review Board(PRRB)	Submit any PR, update any PR, close any PR
PDT Lead	Submit any PR, update the PR if is the owner, close the PR if the owner
Cog	Submit any PR, update the PR if is the assignee
Change Board	Submit any PR, update any PR

Additionally, there will be some users of the system that do not fall into the aforementioned user categories. These users will consist of external persons who would like access to PRs that are relevant to them. They should have viewing access of PRs however, the suppliers should be provided the reports generated from PR database or should obtain access privilege from the Gulfstream Information Security Operation Center (ISOC) to read or update the PR database.

APPENDIX A PR DATA COLLECTION GUIDLINE

When an issue is discovered, it needs to be entered into PR system with enough information to support the PDT leads to start analyzing the issue. Table 3 lists the required data collected upon submit, or update of a PR.

TABLE 3 - PR SYSTEM DATA ENTRY

User	Access Privilege
PR ID	Unique auto generated number by PR system
Title	The title shall reflect the issue found. An example is: Flight Director is too active.
Issue Type	Type of the issue could be Design, Facility, Hardware, Implementation, Requirement, MRB, Software, Test Procedure or unknown.
Description	Detailed explanation shall be entered as to accurately describe the issue.
Origin	Indication where issue originated.
Owner PDT Group	The team responsible to resolve the issue
System	System affected by PR
HW/SW	Hardware or Software related issue

Failure Date	Calendar entry for failure date
Failed SW Mod	Software MOD information
Failed HW Part Number	Hardware part number, if applicable.
Failed HW Part Serial Number	Hardware part serial number, if applicable.
Failed HW Part Nomenclature	Hardware part nomenclature, if applicable.
Supplier	Supplier associated with problem, if problem is supplier related.
Supplier PR#	Supplier PR number, if problem was determined to be supplier related.
Hack Time	Time hh:mm:ss
Flight Number	Flight number
Severity	1-Must fix – Safety related, creates work stoppages, major impacts to supplier, or other major program impacts. 2-Major – Correct as soon as practical, Problem creates need for additional work, creates impacts to testing or other program impacts. 3-Routine – Program impacts are minimal, correction can be scheduled and implemented based on other workload and implemented in the normal course of business. 4-Minor – Program impacts are minor, correction and implementation can be delayed without any significant impact to the program
Design Effectivity	Indicating the aircraft (or multiple aircraft) the problem has the effect on. Could be serial number of aircraft, or in pre-production, the test number of the aircraft.
UUT Configuration	Unit Under Test Configuration
Submitter	PR Submitter information.
Submit Date/Time	PR date and time of Submit
State	State in PR process.
Cog	Person assigned for working on problem.
ECD	Estimated Closure Date
Notes/Comments	Information about problem, such as what was involved in the analysis and how the problem was resolved.

Fix SW Mod	Software version/modification number problem is fixed in, if applicable.
Fix HW Part Number	Hardware part number problem is fixed in, if applicable.
Fix HW Part Serial Number	Hardware part serial number problem is fixed in, if applicable.
Fix HW Part Nomenclature	Hardware part nomenclature problem is fixed in, if applicable.
SEM	SEM number(s)
ECR#	ECR number, if an ECR needs to be generated
DR/DI #	DR/DI number, if a DR/DI needs to be generated.
Production Effectivity	Indicating the aircraft (or multiple aircrafts) the problem has the effect on. Typically the serial number of the aircraft. Not applicable until aircraft is in production.