SARSAT

Configuration Management Plan

Version 1.1

27 October 1999

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Cospas-Sarsat Operations
Configuration Management Plan

1 Introduction

The National Oceanic and Atmospheric Administration (NOAA)/National Environment Satellite, Data, Information Service's (NESDIS) Direct Service Division (DSD) operates the United States Mission Control Center (USMCC) and 14 satellite ground stations referred to as Local User Terminals (LUT). The LUTs and USMCC provide the United States ground segment of the international Cospas-Sarsat Program.

NOAA assumed responsibility of USMCC operations in 1990 with the second generation USMCC which operated on an IBM mainframe computer. Components of the USMCC function were transferred to a PC-based system in 1993. This system is now referred to as the third generation USMCC. As major portions of this system were proprietary to a third party vendor, only a limited configuration management system could be implemented. In 1998 the fourth generation USMCC began initial operations. The system is based on modular design and utilizes the concept of distributed processing. Functions are distributed on different processors operating on a Windows NT Local Area Network (LAN).

Historically, a third party vendor has provided the equipment and the software necessary to perform the functions of Cospas-Sarsat LUTs. Although the software is controlled by the vendor, it is necessary to incorporate portions of the LUT system into this plan. This document is the Configuration Management Plan for the LUTs, the USMCC and all the communication equipment and links managed by the DSD to support the LUT and USMCC systems.

1.1 Purpose

The purpose of this plan is to provide detailed configuration management for hardware, software, and associated documentation related to the United States portion of the Cospas-Sarsat ground segment.

1.2 Scope

This plan applies to all documentation, computer source code, executable programs, data files, software development tools, hardware, operating systems, and processes used in support of the DSD's Cospas-Sarsat mission. Section 2 identifies the responsibilities of the persons involved with configuration management. Section 3 contains details on the items under configuration control. Although configuration management plans typically include all phases of the software development life cycle (design, testing, etc.), this plan only addresses operational software and documentation that has reached version 1.0 or higher. Section 4 describes the procedures used to initiate changes to DSD's Cospas-Sarsat system. Section 5 describes the composition of the configuration control board and criteria used to accept and reject changes. Finally section 6 describes the process to

track the disposition of configuration change requests.

1.3 Definitions

The term “Baseline” is defined as a specification or product that has been formally reviewed and agreed upon, and serves as a basis for further development, which can be changed only through change management procedures. Baseline includes requirements, source code, executable programs, data files, hardware and associated documentation. These items collectively are also referred to as a “System.”

The term “Configuration Management” is defined as a process by which a system’s baselines are identified, controlled and tracked as changes occur or new components to the system are added. The term configuration control is also used to refer to configuration management.

The “USMCC” refers to all mission-critical or mission-support software and hardware systems in use by DSD to complete its mission.

“LUT” refers to the hardware and software systems provided by the LUT vendor for use by DSD. The software is proprietary to the LUT vendor and although the hardware equipment is owned by DSD, the configuration is controlled by the LUT vendor. Modifications to the software and hardware are coordinated with DSD.

The term “Corrective Maintenance” identifies software or hardware maintenance required to correct unexpected problems or to modify the system to meet existing requirements or specifications.

The term “Adaptive Maintenance” identifies system changes resulting from altered requirements in support of national or international initiatives, or planned changes in the processing environment (e.g., addition of new software or hardware, operating environment, data structures or software algorithms).

“Perfective Maintenance” identifies software and hardware maintenance required to improve the operation of the system in terms of efficiency, reliability, performance or maintainability of software.

1.4 References

Further information on configuration management can be obtained from the following sources:

a) “ISO 9000-3,” Raymond Kehoe and Alka Jarvis, Springer, New York, New York 1996.

b) “Software Engineering,” Ian Sommerville, Addison-Wesley Publishing Company, Reading Massachusetts, 1996.

c) “Implementing Configuration Management,” F.J. Buckly, IEEE Press, 1993.

- End of Section 1 -

2 Configuration Management Responsibilities

All authority for managing the USMCC and LUTs is vested in the Chief of the Direct Services Division, and the Contracting Officer's Technical Representative (COTR) for the USMCC maintenance and operations contract, as well as the COTR for the LUT maintenance contract. Responsibilities for the key persons involved in the configuration management process for the USMCC and the LUTs are provided below.

Note that the same person may occupy more than one role, or one functional position may require more than one person. Maintenance and Operations personnel, and LUT Vendor personnel are typically contractors. Additionally, other personnel may be involved, as necessary, to assist the key staff identified below. The current personnel assigned to the configuration management process are identified in Appendix A.

Configuration Manager

The configuration manager is responsible for:

- scheduling configuration control board meetings;
- ensuring that all logs are current;
- reviewing change proposals and submitting them to the configuration control board;
- configuration control audits as necessary;
- ensuring correct configuration control procedures are followed; and
- generating and providing configuration control reports as required.

2.1 USMCC

SARSAT Operations Manager

Coordinates the development and implementation of USMCC systems to include:

- chairing the configuration control board meeting as required;
- approving of all modifications to the USMCC operation;
- approving of all modifications in the LUTs that impact the USMCC;
- managing the disposition and resolution of all system problem reports and system change proposals associated with the USMCC;
- assigning priority to outstanding system problem reports or system change proposals associated with the USMCC;
- developing of any necessary standard operating procedures; and
- determining the requirements specifications of the USMCC.

Maintenance and Operations COTR

Responsible for the maintenance and operations vendor in terms of day-to-day contract performance, duties include:

- allocating resources;
- procuring of additional resources as necessary;
- ensuring adherence to contract specifications;
- coordinating with vendor on software life-cycle management issues; and
- coordinating with vendor on hardware requirements, selection and procurement.

USMCC Chief

Responsible for the day-to-day operation of the USMCC, duties include:

- notifying/coordinating with other MCCs of system modifications as necessary;
- coordinating modifications with operations staff; and
- recommending schedules and priority for system modifications.

Maintenance and Operations Administrative Representative

Responsible for administrative issues related to maintenance and operations contractor, duties include:

- ensuring availability of resources;
- acting as point of contact for configuration management issues between vendor and DSD;
- managing subcontractors involved in system modifications; and
- assigning resources to tasks.

Maintenance and Operations Senior Analyst/Lead Programmer

The maintenance and operations senior analyst, along with the necessary programming staff, will be responsible for leading the design effort associated with any system modifications. In addition the senior analyst, analyst, lead programmer or programmer will also:

- providing time estimates for system change proposals;
- performing tasks to modify system code or system configuration;
- planing and performing all necessary testing;
- planing and performing all aspects of implementation associated with a system change; and
- completing detailed reporting associated with system problem reports or system change proposals.

2.2 LUTs

LUT Maintenance COTR

Coordinates the development and implementation of LUT systems to include:

- chairing configuration control board meetings as required;

- approving all modifications to the LUT system;
- managing the disposition and resolution of all system problem reports and system change proposals associated with the LUTs;
- assigning priority to outstanding system problem reports or system change proposals associated with the LUTs;
- developing any necessary standard operating procedures for the LUTs;
- managing the requirements specifications of the LUTs;
- managing the LUT vendor in terms of day-to-day contract performance;
- allocating resources associated with the LUT vendor;
- procuring additional resources as necessary;
- ensuring adherence to contract specifications;
- coordinating with vendor on software life-cycle management issues; and
- coordinating with vendor on hardware requirements, selection and procurement.

SARSAT Operations Manager

Coordinates the development and implementation of LUT systems that affect USMCC operations.

USMCC Chief

Responsible for the day-to-day operation of the USMCC, duties include:

- notifying/coordinating with other MCCs of system modifications as necessary;
- coordinating modifications with operations staff; and
- recommending schedules and priority for system modifications.

LUT Maintenance Vendor

Responsible for administrative and technical issues related to LUT maintenance as defined by contractual parameters, duties may include:

- ensuring availability of resources;
- acting as point of contact for configuration management issues between vendor and DSD;
- managing responsibility for any subcontractors involved in system modifications;
- assigning resources to tasks;
- providing time estimates for system change proposals;
- performing tasks to modify system code or system configuration;
- planning and performing all necessary testing;
- planning and performing all aspects of implementation associated with a system change; and
- completing detailed reporting associated with system problem reports or system change proposals.

- End of Section 2 -

3 Items Under Configuration Management

All base lined items are under configuration management. As described in section 1, a baseline is an official version of a product or documentation. Those items whose functional and performance parameters require strict control will be placed under configuration control. Also, those item's that interface with other components or external agencies (i.e., the Coast Guard or the Air Force) will be under configuration management. In order to identify items under configuration management, the following general guidelines were followed:

a) whether the component is considered mission critical, mission support, or operational by DSD or NESDIS;
b) the ability to uniquely identify an item; and
c) the requirement for approval.

This section provides details on which items are base lined, therefore under configuration management. Appendix B describes the current DSD systems and sub-systems under configuration management. The relationship between application software, hardware, operating systems, and commercial products is described in the USMCC Baseline Source document.

3.1 USMCC

3.1.1 Application Software

Software used by DSD to produce, or support, data distribution is subject to configuration control. This includes, but is not limited to:

- all C++, Fortran, Clipper, Visual Basic and SQL source code;
- all ASCII and SQL configuration files with the exception of those listed in section 3.1.7;
- all header/include files;
- all executable code;
- all stored SQL procedures;
- all scripts/macros;
- timer and triggers
- all SQL Server Views; and
- all batch files.

Application software is stored in the appropriate directories as identified in Figure 3.1. Access to the software directories is limited to appropriate personnel. Application software will be modified according to the standards contained in *[TBD]*.

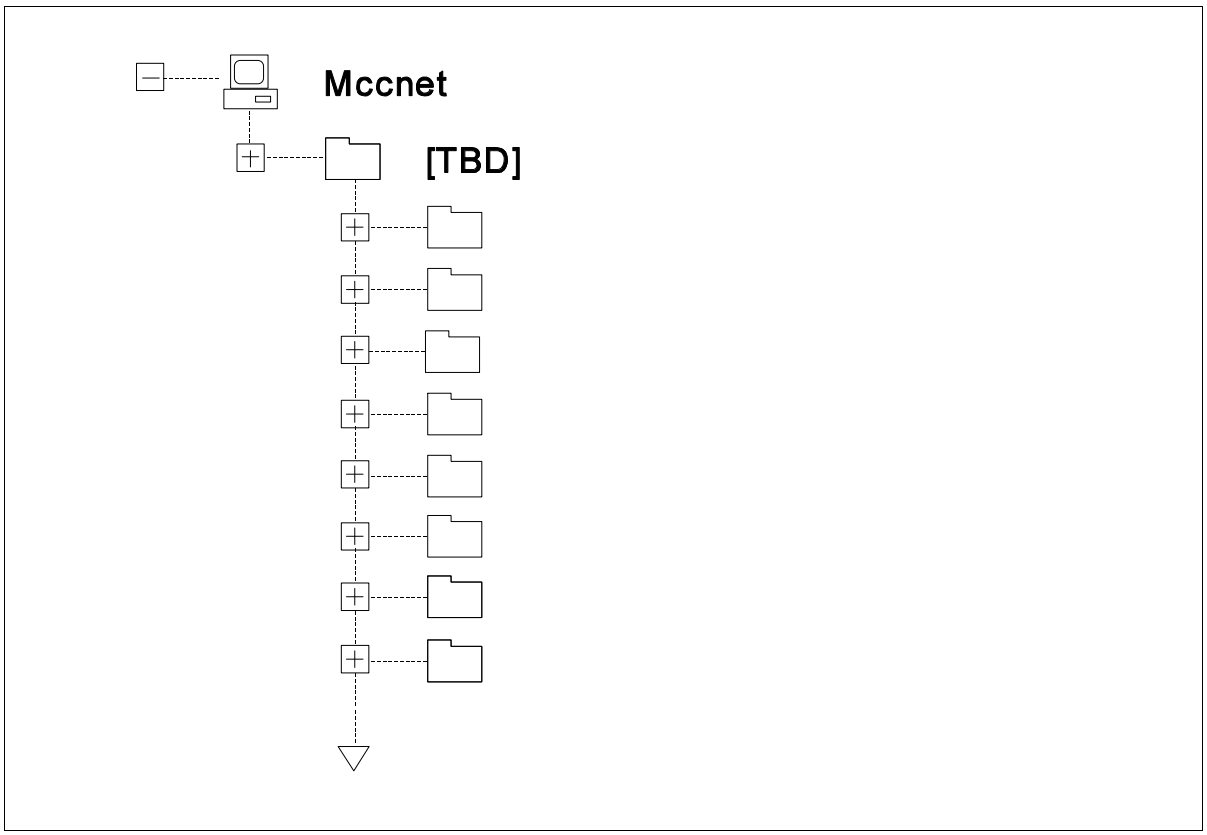

Figure 3.1: Application Software Directory Structure

3.1.2 Software Development Tools

Software development tools (e.g., compilers) used in the production of application software are under configuration control, the following products, as well as others, are under configuration management:

- MS Visual C++;
- MS Fortran;
- Clipper;
- Intersolve;
- MS Visual Basic; and
- MS Enterprise Manager.

3.1.3 Commercial Off The Shelf Software (COTS)

All commercial off the shelf software required to support the USMCC and LUTs are also under configuration control. This includes, but is not limited to:

- all drivers required by application software (e.g., ODBC);
- all software fixes and updates (service packs, including dynamically linked libraries);
- MapInfo;
- Windows NT Operating System;
- ProComm Plus32;
- EICON software;
- dBASE III+;
- MS Exchange;
- Outlook Express 98;
- WordPerfect 7.0; and
- *[e-mail]*.

3.1.4 Data Files

All data and configuration files (except those identified in section 3.3) used operationally by the USMCC are under configuration control. The location and access restrictions for data files is also under configuration control. These files include, but are not limited to:

- the Windows NT Registry in the USMCC;
- all binary files used by the USMCC;
- all ASCII files used by the USMCC;
- timers;
- all MS SQL Server tables used by the USMCC on an operational basis;
- WordPerfect documents used as input to the Incident History Database;
- all dBASE III+ files used by the USMCC on an operational basis; and
- all MS SQL Server Scripts used to generate tables.

3.1.5 Hardware

Hardware and firmware items required for the production and distribution of alert or support data are under configuration control. Specifically the following components, at a minimum, are included under configuration control:

- all processors (e.g., 4gmcc_net - alert, SQL database, Sarmap);
- Netware servers;
- all communication equipment (e.g., switches, pad and modems); and
- all LAN equipment.

The configuration status of the above equipment shall be maintained in document

[\\MCCNET\DOCUMENT\TBD]

3.1.6 Documentation

Documentation generated by DSD in support of the United States Cospas-Sarsat Program will be under configuration control. Documents describing requirements, interfaces, and descriptions are under configuration control. Documents include, but are not limited to:

- Functional Requirements Document;
- Functional Description Document;
- Detailed Description Document;
- Data Structures Document;
- RCC Messages Document;
- RCC Training Document;
- RCC Users Manual;
- IPD-DSD Interface Control Document;
- Telemetry and Command Procedures[1];
- Communications Description Document;
- National Coding Guidelines;
- Standard Operating Procedures;
- Data Transfer Specifications; and
- Configuration Management Plan.

A comprehensive list of documentation is provided at:

\\MCCNET\DOCUMENT\DOCUMENT.LST

[1] Document is maintained by Canada (DnD), France (CNES) and the United States (NOAA/NASA)

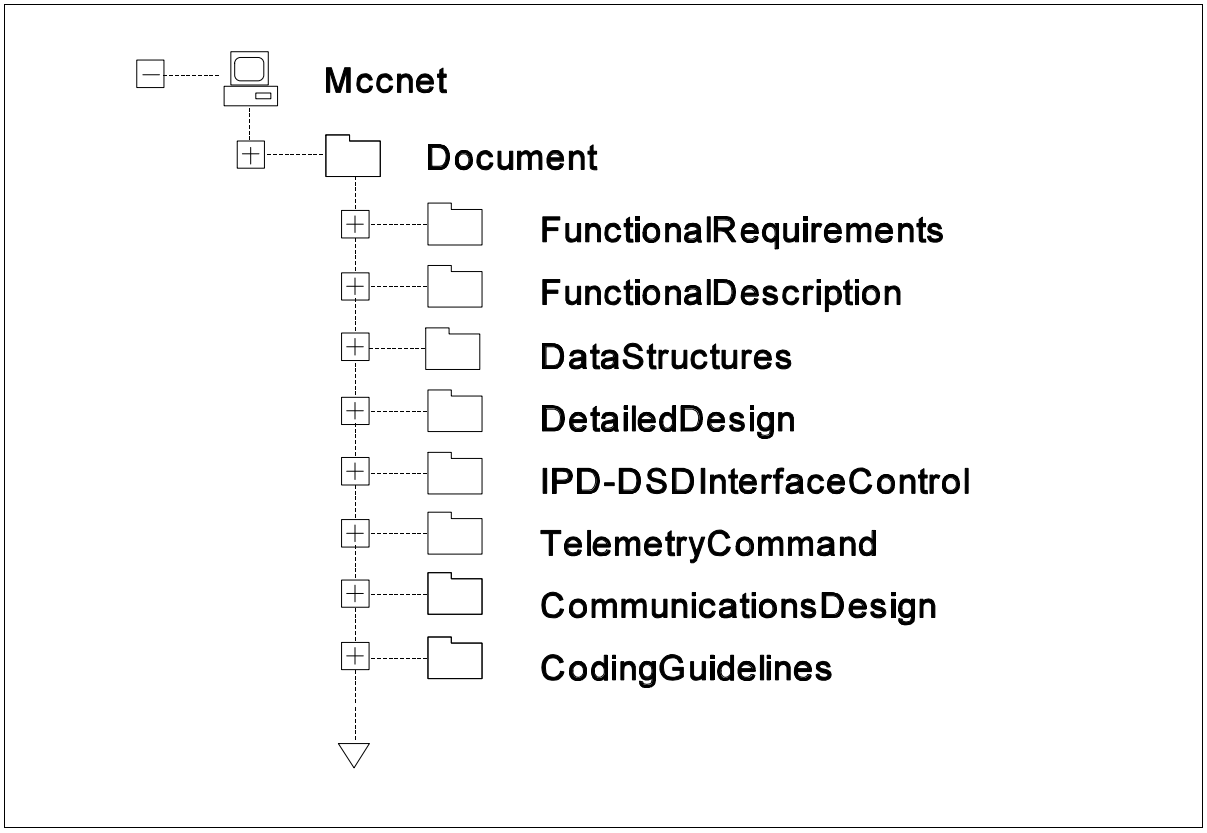

Figure 3.2: Document Directory Structure

The individual documents listed above, as well as other operational documents, are stored electronically according to the scheme provided in Figure 3.2.

3.2 LUTs

The configuration of individual software and hardware components of the LUTs is not maintained by DSD. However, all modifications are controlled through DSD configuration management. The communication equipment at the LUTs is maintained by the maintenance and operations vendor, and is included under the hardware described in section 3.1.5.

3.3 Items Not Included in Configuration Management

There are some configuration items used by USMCC operations that are not required to be under this configuration management plan. Namely, configuration items that must be changed on short notice in response to changes in the operational environment. The configuration files (i.e., tables) not required to be under configuration control are:

- ComSiteCfg;
- SarRoutingCfg;

- AlertSite123SAR;
- AlertSite406SAR;
- MCCNOCRRoutingCfg;
- ComSiteEmailPathCfg (for routing only);
- ComSiteX25PathCfg (for routing only);
- Alert124FilterCfg (only for configuration to do with beacon exception processing);
- MccAlertRoutingCfg; and
- MidCfg.

In addition, certain documentation is also not addressed by this configuration plan. This includes documentation used only by the operations staff, documentation developed and maintained by other organizations and used for reference by DSD (e.g., LUT documentation), and finally documentation that is maintained under the configuration control of another organization (e.g., Cospas-Sarsat documentation).

- End of Section 3 -

4 Change Control Procedures

Any change to an item, or an addition of an item, in the base lined system requires tracking using System Problem Reports (SPR) or System Change Proposals (SCP). SPRs are used to identify and initiate work to resolve a system problem. A system problem occurs when the system, or any of its components, malfunctions or does not meet defined requirements or specifications. SPRs are used to initiate corrective maintenance.

SCPs are used to propose changes, enhancements, or additions to the system. The change may be required to support adaptive or perfective maintenance. SCPs are also to be used to change system requirements or specifications. Figure 4.1 presents an overview of the change control procedures, and Figure 4.2 presents further details on the generation and use of SPRs and SCPs. Note that SPRs and SCPs can be generated by any person.

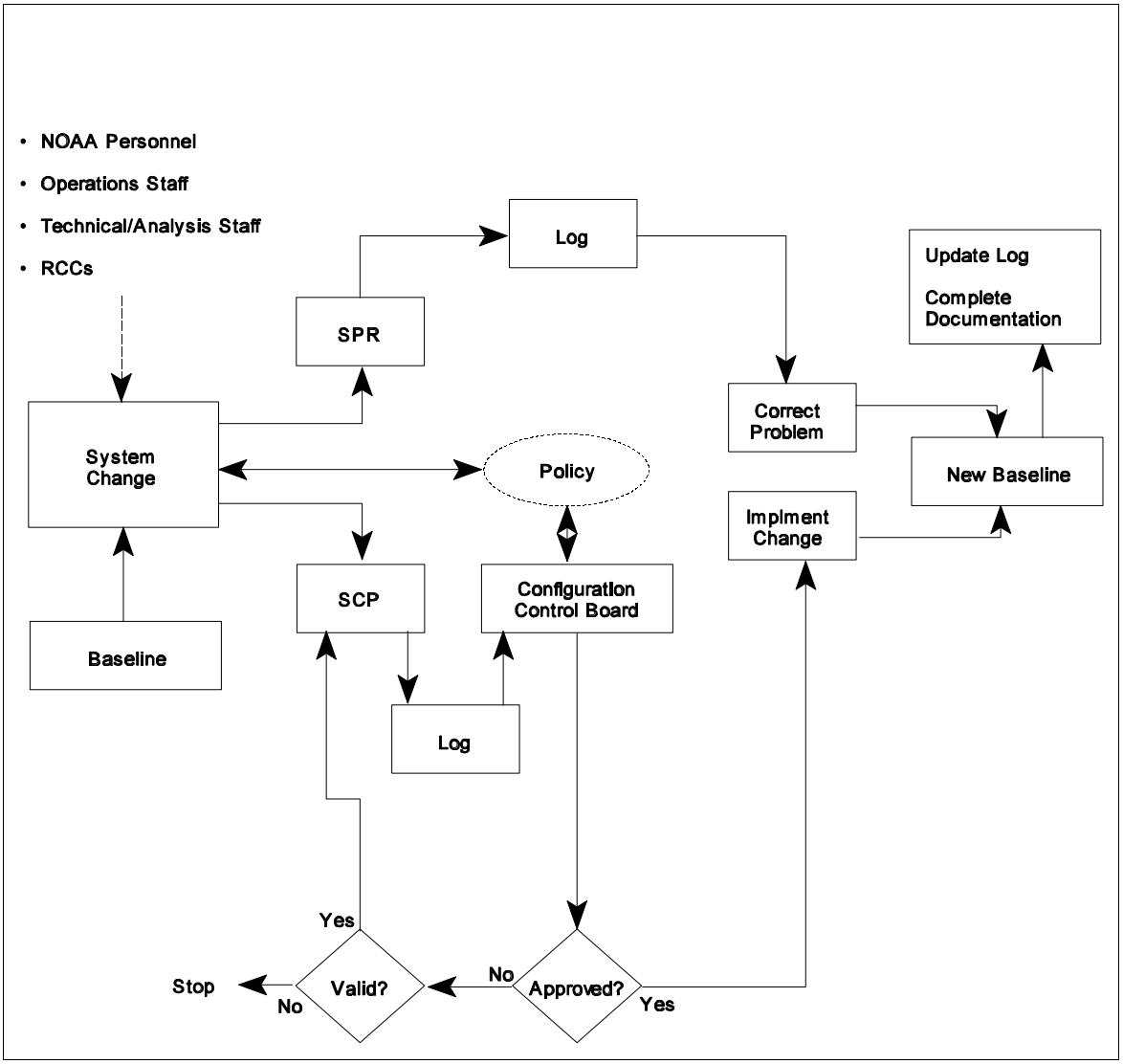

Figure 4.1: Overview of Change Control Procedures

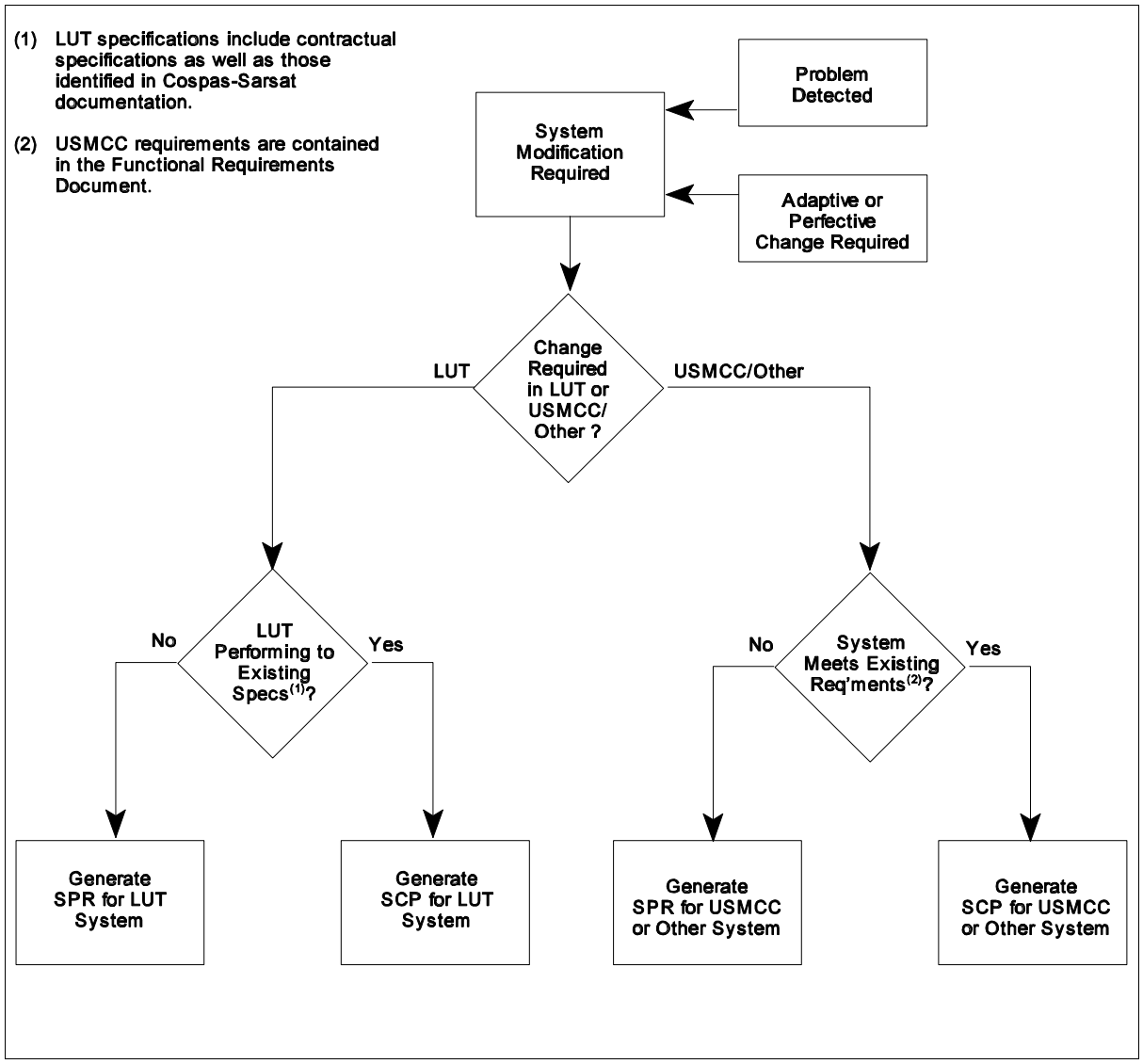

Figure 4.2: Use of SPRs and SCPs

4.1 System Problem Reports (SPR)

SPRs are typically generated by operational personnel as a result of routine monitoring or analysis. The anomalous system is identified and appropriate personnel notified. Procedures for notifying the LUT vendor regarding critical problems, or notifying supervisory personnel are contained in the Standard Operating Procedures.

Non-critical LUT problems should be reported to the LUT maintenance COTR for corrective action. All SPRs shall be reviewed by the Configuration Control Board after correction of the problem. Figure 4.3 describes the SPR process. Specific instructions can also be found in section 6.

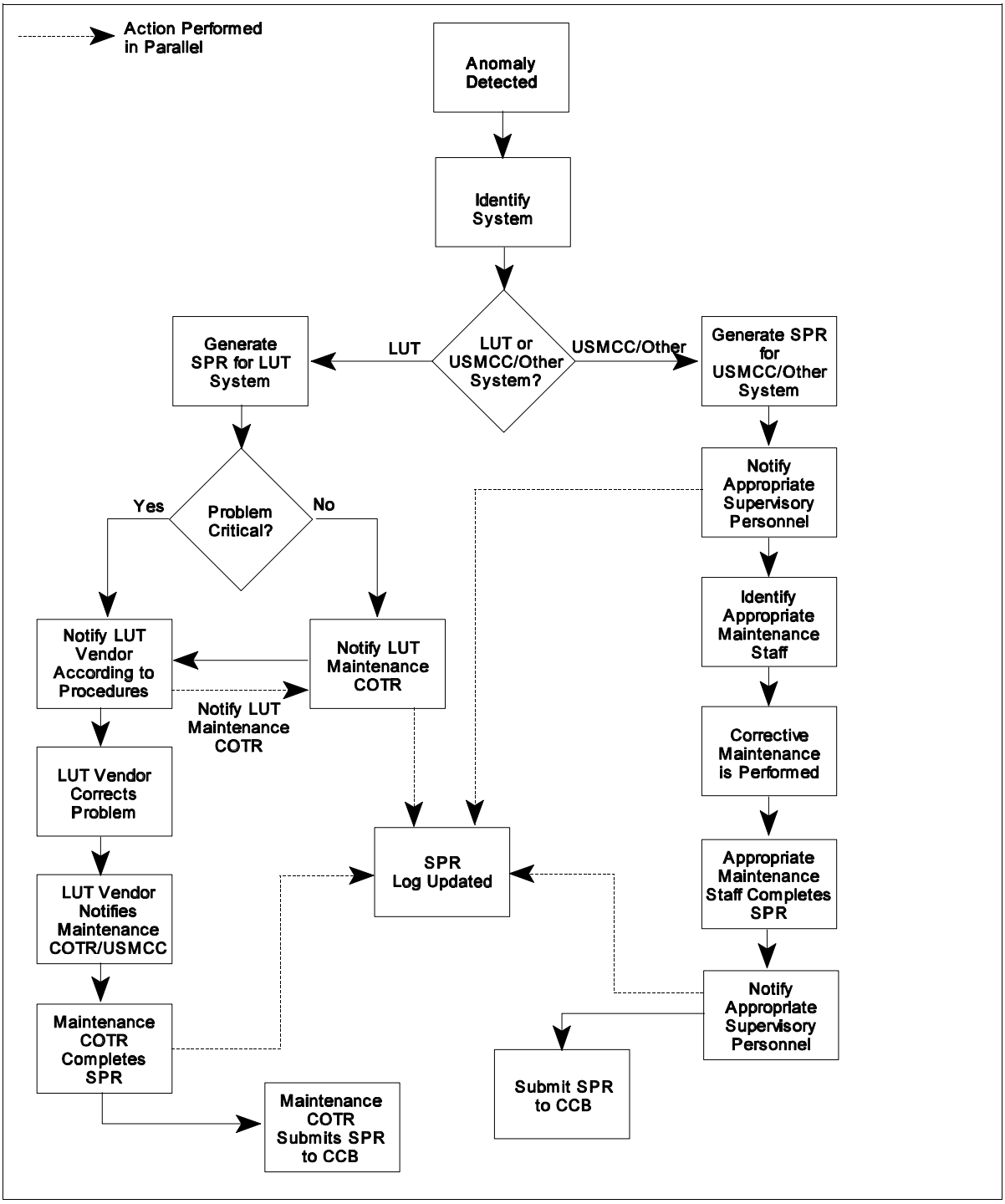

Figure 4.3: SPR Flow

Critical problems for the LUT or the USMCC system are defined as anomalies that degrade the performance of the System so that search and rescue operations are impacted. For example:

- cause the loss of any alert data;
- cause a delay in the reception or transmission of alert data; or
- cause incorrect or invalid alert data to be transmitted.

Problems identified by external agencies (e.g., United States Air Force, United States Coast Guard, or other MCCs) should be reported to the SARSAT Operations Manager for initiation of a SPR. A SPR form is provided at Appendix C. The specific procedures to inititate

4.2 System Change Proposals (SCP)

SCPs are generated by anyone to initiate adaptive or perfective maintenance. The appropriate system and subsystem(s) are identified, the objective and the justification for the change are provided on the SCP form (a blank form is provided at Appendix D).

For changes to the LUT system only the objective and justification for the change are required. The SCP should then be logged and submitted to the Configuration Control Board for further action. For changes to the USMCC system the person(s) performing the work, the estimated effort, and possible approaches to be used to implement the change should also be included. Figure 4.4 describes the initiation of a SCP. Specific instructions can also be found in section 6.

4.3 Software Release Control

[To Be Developed - controls simultaneous updates of software, coordination of updating software at more than one site, and procedures for releasing software]

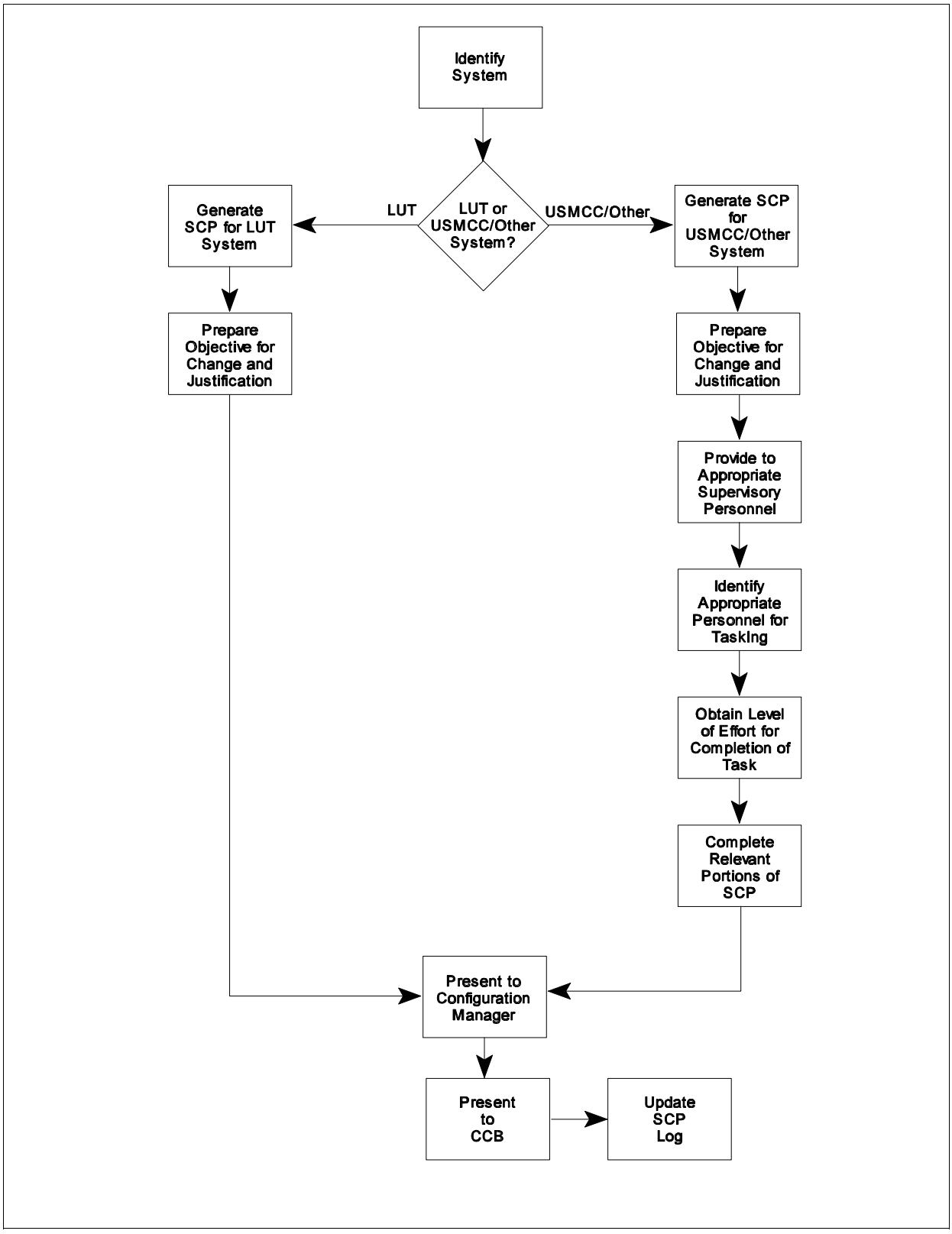

Figure 4.4: SCP Initiation

4.4 Software Version Control

[To Be Developed - identify unique versions of each software item, and identify versions of each software item which together constitute a specific version of a complete product]

4.5 Document Version Control

[To Be Develop]

- End of Section 4 -

5 Configuration Control Board

The configuration control board should meet as required to manage the configuration control process for the USMCC and LUT systems.

5.1 Authority

The configuration control board is responsible for reviewing completed and outstanding SPRs, and for reviewing, evaluating and approving SCPs. The configuration control board also evaluates reports and trends associated with the change control process, and administers this configuration management plan.

5.2 Membership

The membership of the configuration control board depends on the system(s) involved with the change. For changes to the USMCC system the following persons should be on the configuration control board as a minimum:

- Configuration Manager or designated representative;
- SARSAT Operations Manager or designated representative;
- Maintenance and Operations COTR or designated representative;
- USMCC Chief;
- Maintenance and Operations Administrative Representative; and
- Maintenance and Operations Senior Analyst or Lead Programmer (as required).

For changes to the LUT system the following persons should participate on the configuration control board as a minimum:

- Configuration Manager or designated representative;
- LUT Maintenance COTR or designated representative;
- SARSAT Operations Manager or designated representative;
- LUT Maintenance Vendor (as contractual agreements allow).

For both systems other persons (e.g., programmers, analysts, management) will be invited to participate as required.

5.3 Approval Process for SCPs

The change process is initiated by the submission of a SCP to the Configuration Manager who, after appropriate review and logging, distributes copies of the SCP to members of the configuration control board prior to the next meeting. The exception to the above being an SCP that is deemed URGENT by the initiator– in that case the SCP is to be immediately referred to the appropriate COTR for approval. The COTR, in evaluating the SCP, will take into consideration its immediate operational impact and will either approve or reduce its status to routine in which case

it will be reviewed at the CCB's next scheduled meeting. The configuration control board evaluates the request and determines whether the change should be approved. The determination is made by the respective COTRs considering the following factors:

- functional aspect of the change (e.g., consequences of not implementing change and complexity of change);
- current phase of the project;
- possible alternatives to the proposed change;
- resources required to implement change (time and cost);
- documentation requirements;
- integration and testing requirements;
- effect on other processing; and
- interface to other agencies/organizations.

Figure 5.1 describes the SCP approval process.

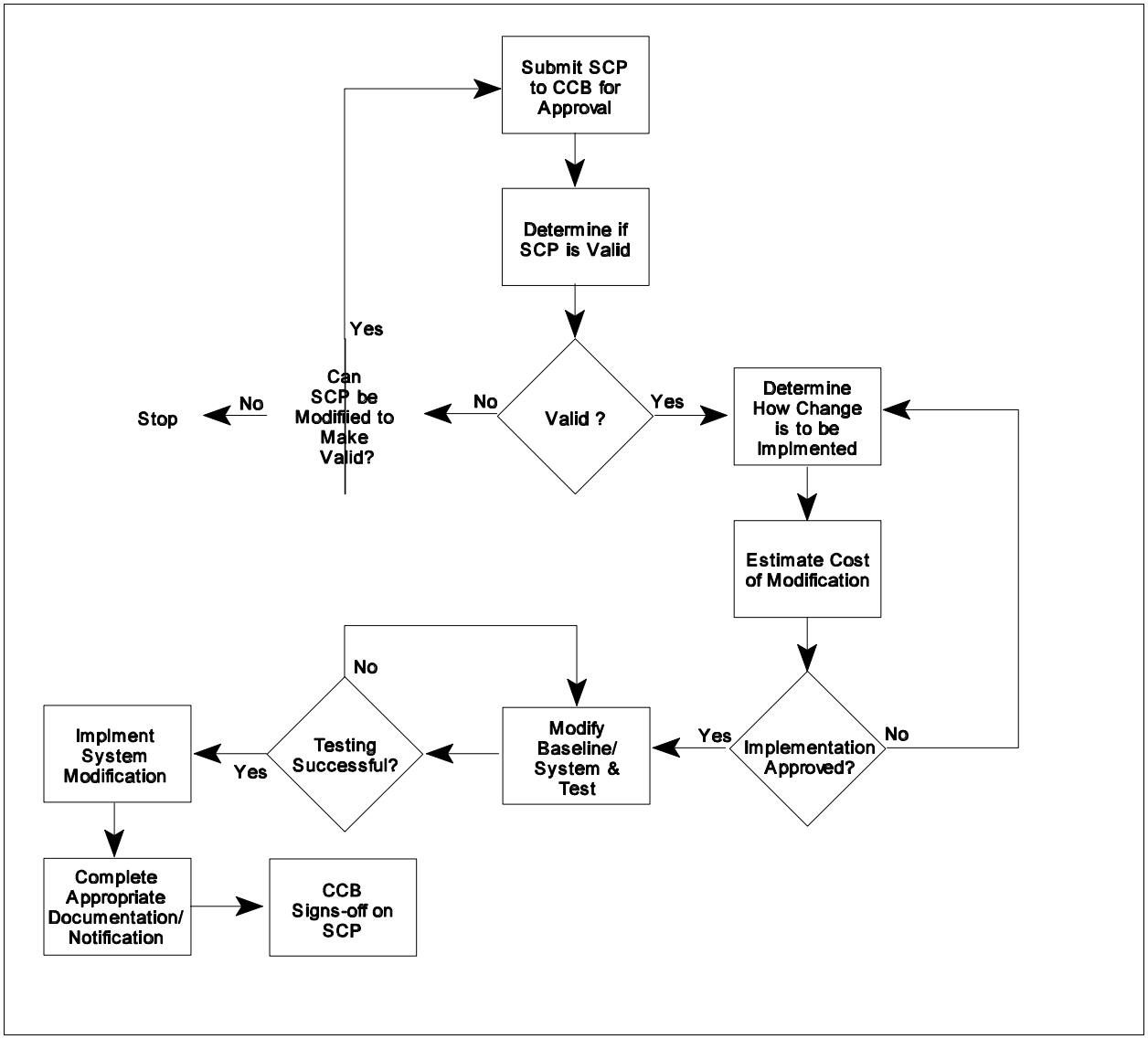

Figure 5.1: Approval Process for SCPs

- End of Section 5 -

6 Configuration Control Tracking and Reporting

Modifications to the USMCC and LUT systems are tracked so that the configuration control board can assign priorities and ensure system problems are corrected, and proposed changes are properly tracked.

The current status and disposition of SPRs and SCPs will be tracked using the log described at Appendix E. Separate logs exist for SPRs and SCPs. If a SPR or SCP is open one of the statuses described in Table 6.1 applies. If a SPR or SCP is one of the dispositions contained in Table 6.2

applies. All SPRs and SCPs completed since the previous meeting of the configuration control board, and all open SPRs and SCPs will be reviewed by the configuration control board.

System Problem Report (SPR) Status	System Change Proposal (SCP) Status
No Work Performed - NW Work has not been initiated yet for this SPR.	Under Review - UR The SCP has been logged but has not been considered by the configuration control board
Design Phase - DP Modification to the system is being designed.	Design Phase - DP Modification to the system is being designed.
Coding Phase - CP Software is in the process of being modified. For hardware modifications, equipment is being modified or procured.	Coding Phase - CP Software is in the process of being modified. For hardware modifications, equipment is being modified or procured.
Test Phase - TP Modification is being tested.	Test Phase - TP Modification is being tested.
Implementation Phase - IP Modification is being integrated.	Implementation Phase - IP Modification is being integrated.
Documentation Phase - AP Appropriate documentation is being updated or created.	Documentation Phase - AP Appropriate documentation is being updated or created.
	On Hold - OH SCP reviewed, but on hold.

Table 6.1: Statuses of SPRs and SCPs

System Problem Report (SPR) Disposition	System Change Proposal (SCP) Disposition
Work Completed - WC Modification has been completed, integrated and all appropriate documentation updated.	Work Completed - WC Modification has been completed, integrated and all appropriate documentation updated.
Changed to SCP - CS After review SPR has been changed to an SCP	Changed to SPR - CS After review SCP has been changed to an SPR.
Not a Problem - NP After review it was determined that a problem did not exist.	SCP Not Approved - NA After review SCP was not approved.

Table 6.2: Disposition of SPRs and SCPs

SPR and SCPs, and associated logs are stored according to the structure provided at Figure 6.1. Each SPR or SCP will be contained in a separate WordPerfect 7.0 file under the year it was initiated. Corresponding logs will be WordPerfect 7.0 files at the Mccspr, Mccscp, Lutspr and Lutscp directory levels.

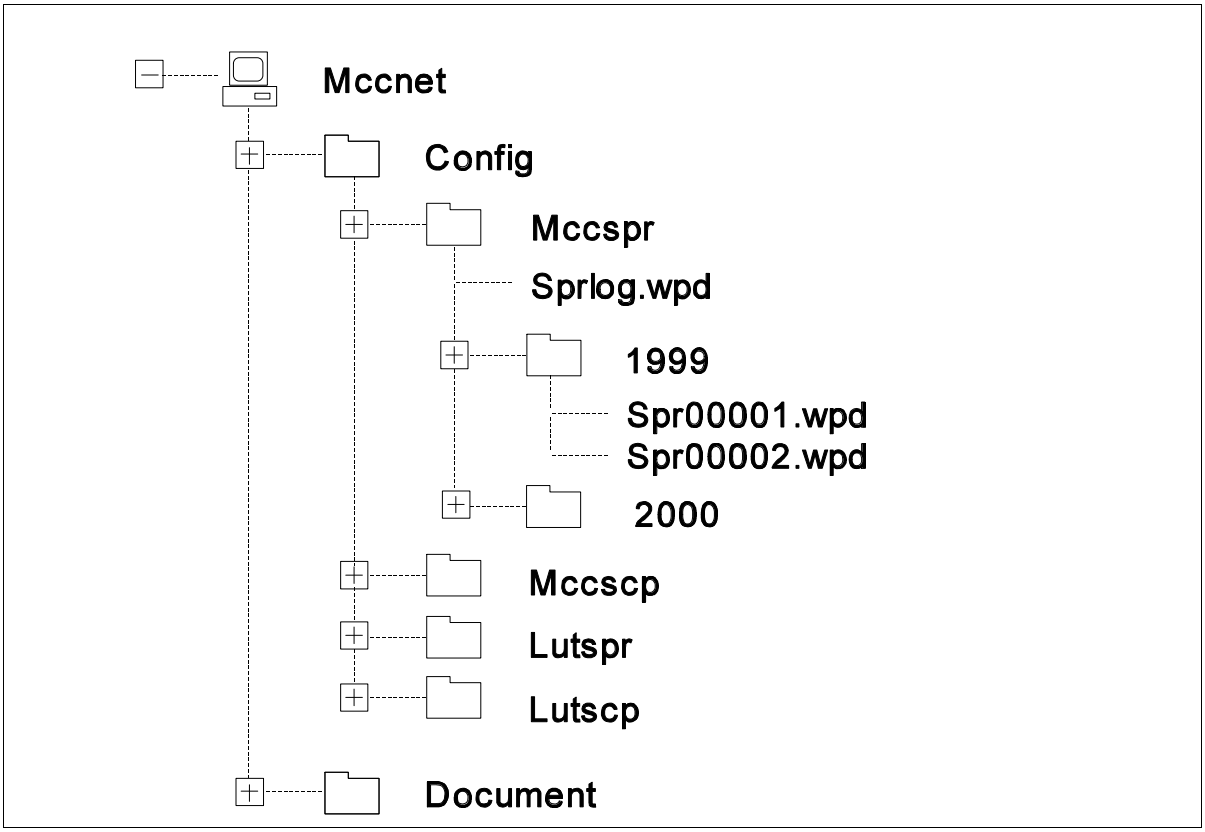

Figure 6.1: SPR/SCP Directory Structure

All numbering of SPRs and SCPs is sequential. SCP numbers for the USMCC and LUT systems are assigned by the Configuration Manager or the designated representative. SPR numbers are assigned by the person initiating the SPR, or the appropriate supervisory personnel.

When generating a SPR, the appropriate personnel will consult the USMCC or LUT SPR log and obtain the next sequential number to assign. This number will be inserted on the SPR form in the "Ref. N°." cell. Each SPR/SPR form will be stored in a individual file. The naming convention for the file will be SPRxxxxx.wpd where xxxxx is the sequential number of the SPR.

SCPs will also be numbered and filed in the same manner. At the end of each calendar year, all closed SPRs will be purged from the active log and placed under the appropriate year.

The following reports will also be reviewed at least once a quarter:

- number of software modules under configuration control;
- number of SPRs and SCPs opened during the reporting period;
- number of SPRs and SCPs closed during the reporting period;
- average time to close SPRs and SCPs;
- mean time between failures and mean time to repair by subsystem; and
- number of SPRs and SCPs open greater than 60 days.

- End of Section 6 -

Appendix A

Configuration Management Responsibilities

Configuration Manager	Lou Rubin Direct Services Division
SARSAT Operations Manager	William Burkhart Direct Services Division
Maintenance and Operations COTR	William Burkhart Direct Services Division
LUT Maintenance COTR	Rick Vizbulis Direct Services Division
USMCC Chief	Robert Patton Science Systems and Applications, Inc.
Maintenance and Operations Administrative Representative	Sam Baker Science Systems and Applications, Inc.
Maintenance and Operations Senior Analyst/Lead Programmer	Tom Griffin Science Systems and Applications, Inc. Neil McConlogue Research and Profession Services

Appendix B

List of USMCC and LUT Systems

B.1 System: USMCC

Sub-System	Functions	Sub-System Identifier
Alert Processing	Validation, Match, Merge, Message Content, Destination	ALRT
Communication	Receipt, Data Formatting and Distribution of data and information	COMM
System Data	Telemetry Processing, Orbit Vector Processing, SIT 605, Spacecraft Commanding, Narrative Messages	SDAT
SAR Mapping	Perform Geosort and other Map Query functions	SMAP
System Monitoring	LUT Performance, MCC, Satellite, Large Location Error Reporting	SMON
Operator Interface	O-PLOT, Message Query, Operator Log	OPER
Database Maintenance	Archive, Purge, Backup, Database Performance	DBMN
Incident History Database	Entry, Report Generation	IHDB
Registration Database	Entry, Confirmation Process, Report Generation	RGDB
Self-test and Monitoring	Availability, Performance, Statistical Reports	SAMS
LUT Monitoring Database	Availability, Contract Accounting	LMDB
Interference Monitoring	Interference Match/Merge, Report Generation	INTF

B.2 System: LUTs

[To Be Developed]

B.3 Documentation

List of USMCC and LUT documentation under configuration management is stored in file:

\\MccNet\Document\Document.lst

Appendix C

System Problem Report

System Problem Report (SPR)						Ref. Nº :
System: USMCC **Q** LUTs **Q** Other **Q**		**Sub-System:**		**Report Date:** (mm/dd/yyyy) **Report Time:** (GMT) (hh:mm)		
Classification:	Software **Q**		Hardware **Q**		Documentation **Q**	
Reported By:	**Reported To:**		**Priority:** Urgent **Q**		Routine **Q**	
Description of Problem: (continue on another paper)						
Problem Solved By:			**Implementation Date:** (mm/dd/yyyy) **Implementation Time:** (GMT)			
Description of Solution: (continue on another paper)						
Documents Updated:			**Personnel/Organizations Notified:**			
Actual Effort (labor-hours):						

	SPR Completed By: **Date:**	

Appendix D

System Change Proposal

System Change Proposal (SCP)				Ref. Nº :	
System: USMCC **Q** LUTs **Q** Other **Q**	**Sub-System:**		**Proposed By:**	**Proposal Date:** (mm/dd/yyyy)	
Classification:	Software	**Q**	Hardware **Q**	Documentation	**Q**
Personnel Required:	**Estimated Effort:** (labor-hours)		**Type:** Adaptive **Q** Perfective **Q**	**Priority:** Urgent **Q** Routine **Q**	
Costs:	Hardware:		COTS:	Other:	
Purpose/Description of Modification: (continue on another paper)					
Approval Status:	Approved	**Q**	Disapproved **Q**	Re-submit:	**Q**
Authorizing Official: (Signature)			**Date Approved:** (mm/dd/yyyy)		
Work Completed By:			**Implementation Date:** (mm/dd/yyyy) **Implementation Time:** (GMT)		
Description of Solution: (continue on another paper)					
Documents Updated:			**Personnel/Organizations Notified:**		
Actual Effort (labor-hours):					

Appendix E

Configuration Control Log

System Problem Report (SPR) Log

SPR Identifier	Date SPR Generated	Sub-System	Description	Priority	Status (per Table 6.1)	Disposition (per Table 6.2)	Date Log Last Updated
Log Last Updated: Log Last Updated By:							

Status Codes:

NW	No work performed
DP	Design phase
CP	Coding phase
TP	Test phase
IP	Implementation phase
AP	Documentation phase

Disposition Codes:

WC	Work completed
CS	Changed to a SCP
NP	Determined not to be a problem

System Change Proposal (SCP) Log

SCP Identifier	Date SCP Generated	Sub-System	Description	Priority	Status (per Table 6.1)	Disposition (per Table 6.2)	Date Log Last Updated
Log Last Updated: Log Last Updated By:							

Status Codes:

UR	Under Review
DP	Design phase
CP	Coding phase
TP	Test phase
IP	Implementation phase
AP	Documentation phase
OH	On Hold

Disposition Codes:

WC	Work completed
CS	Changed to a SPR
NA	SCP not approved