BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND

AFMC INSTRUCTION 63-401

16 APRIL 2003

ACQUISITION

SOFTWARE REQUIREMENTS REVIEW PROCESS

NOTICE: This publication is available digitally on the HQ AFMC WWW site at: https://www.afmc-wpafb.af.mil/pdl/pubs.htm.

This instruction implements AFMCPD 63-4, *Software Requirements Review Process,* and applies to mission critical computer software. The Software Requirements Review Process (SRRP) is used for the documentation and approval of mission critical computer software maintenance requirements on weapon systems. The SRRP documentation provides a record of major command (MAJCOM) requests for mission critical software maintenance, a description of specific maintenance actions required, and documents the funding resources necessary to complete the maintenance actions. The SRRP is designed to support and bridge together MAJCOM operational requirements development, program office maintenance action resource requests, and MAJCOM requests for software maintenance funding. The process requires the use of the Software Requirements Application (SRA) database for inputting the required information and generating the AFMC Form 230 (CG), **Software Support Requirements Documentation**, and AFMC Form 231 (CG), **Software Task Detail Description**. The SRA is a database that maintains all of the information that is used to generate the forms. This document explains the process, required documentation, responsibilities of participants, and required reviews. The SRRP User's Guide is published in the AFMC Financial Management Reference System as Chapter 97, Software Requirements Review Process. It provides additional information on the process, the Software Requirements Application (SRA), and Guidance for National Security Systems Software Funding Polices/Procedures. The SRA contains a user's guide under the help menu. The web site for chapter 97 is: **https://www.afmc-mil.wpafb.af.mil/HQ-AFMC/FM/FMRS/frames/fmrsfram.htm?fmrsttoc.htm**. This instruction applies to organizations having single manager (SM) and software support responsibilities for weapon systems. This instruction does not apply to the Air National Guard or US Air Force Reserve units and members.

SUMMARY OF REVISIONS

This document has been revised to require that a methodology be used to convert software requirements into man hours and that the methodology be documented and retained by the SM for a period of one year after completion of the task. Use of the Software Requirements Application (SRA) database is required for inputting data and generating the AFMC Form 230 (CG) and AFMC Form (CG) 231. The SM may delegate the preparation of the forms to another organization such as the software support organization

(SSO). In compliance with AFPD 63-12, AFI 63-1201 and AFMCI 63-1201, *Assurance of Operational Safety, Suitability and Effectiveness (OSS&E),* the chief engineer or lead engineer of the weapon system or end item, or as delegated, will sign the AFMC Form 230 (CG). The requirement to have the chairman of the Software Configuration Control Sub-Board (SCCSB) sign the AFMC Form 230 (CG) has been eliminated. Users Annual Review (UAR) has been changed to Software Requirements Review (SRR). This revision also provides for recommending changes to this instruction.

1. Software Requirements Review Process (SRRP). The SRRP is used to communicate software support requirements between the process participants identified in Paragraph 1.2, Responsibilities. These requirements may be for organic, contract, and/or inter-service depot level maintenance. The SRRP is a baseline process that will enable AFMC to trace organic and inter-service workload requirements to be funded by Element of Expense/Investment Code (EEIC) 540, Software Maintenance, Depot Purchased Equipment Maintenance (DPEM) and for contractor workload requirements to be funded by EEIC 56000, Contract Depot Maintenance (CDM) Purchase of Software Maintenance. Validated requirements provide the foundation for users (MAJCOMs) to build funding requests through the Planning, Programming, and Budgeting System (PPBS). All other types of funds (i.e.; contractor logistics support (CLS); interim contractor support (ICS), Research, Development, Test and Evaluation (RDT&E) (3600)) are excluded.

As a result of this process, a concrete and agreed upon set of software maintenance requirements between the user, SM, SSO, and budget reviewers will be achieved. The SRRP will capture all software maintenance requirements on fielded systems and projections for those new systems anticipated during the requirements cycle. Requirements being reviewed will include the execution year and the next eight fiscal years (if appropriate). For the SSO, the SRRP will provide the vehicle to define, validate, and justify the resources necessary to provide the user with the requested software maintenance support. The SRRP is designed with Depot Maintenance customers in mind for the purpose of outlining software work requests. This process also includes the identification of all other funding sources and interrelated tasks to support the proposed changes.

Once the requirement has been identified and validated per the SRRP, the data will be maintained in the Maintenance Planning and Execution (MP&E) database.

1.1. Process Flow**.** The SRRP consists of four steps, Requirements Identification, Analysis, Reviews, and input into HQ AFMC's data systems. Upon completion of these four steps, the data is used in the Depot Purchased Equipment Maintenance (DPEM) process to coordinate budgetary requirements and funding between AFMC and its customers. The DPEM process is described in the DPEM Process Guide, Chapter 92 of the AFMC Financial Management Reference System at: **https:// www.afmc-mil.wpafb.af.mil/HQ-AFMC/FM/FMRS/frames/fmrsfram.htm?fmrsttoc.htm.**

1.1.1. Requirements Identification. Candidate requirements (change proposals) fall into several categories: (a) corrective maintenance {to correct faults that exist in the code from design}; (b) perfective maintenance {the need for improved performance or other attributes}; and (c) adaptive maintenance {to adapt the weapon systems to a changed environment}. These change proposals are submitted throughout the year from a variety of sources: (a) The MAJCOM user; the user would normally identify software requirements associated with enhancements or new capabilities. Software problems that result in system failures are <u>not</u> typically known as software failures at the user level. (b) Test and Evaluation community; performance issues during follow-on test and evaluation activities may drive software change requirements. (c) Prime contractors; weapon

system sustainment activities may also identify software change requirements. (d) Single Manager/System engineering; change requirements may be identified which support trend analysis or service life extension issues (specification changes/part substitution/technology insertion). (e) The SSO; the primary source for the analysis of change proposals, for the identification or validation of software deficiencies or proposals for enhanced software performance, and to develop and implement change requirements which address those issues.

Validated change requirements are prioritized based on impacts to the weapon system and are either collected for implementation in a fixed time period sometimes known as a block cycle or implemented in an out of cycle change based on operational need (emergency changes). These emergency change requirements flow through a time compressed SRRP to accommodate the short time requirement. Emergency changes will use the same documentation as a requirement scheduled in a normal block cycle. The SM will be responsible for prioritizing, consolidating, and the implementing those requirements based in part on inputs (impacts to the weapon system) from the SSO and the user.

1.1.2. Analysis. Continuous analysis is conducted on submitted requirements resulting from the requirements identification. The following actions will be taken to document software maintenance requirements: Develop a general description/scope of the entire effort, prepare a task breakout with accompanying descriptions, identify resources required to accomplish the tasks (i.e., man-hours, special equipment/tools), develop a maintenance schedule, and determine the applicable software category (operational flight program (OFP), automated test equipment (ATE), test program set (TPS), Electronic Warfare (EW), mission planning, Communications-Electronics (C-E), and other). Results of this analysis will be used to enter the information into the SRA which generates the forms which are submitted to the user for review.

1.1.3. Reviews. The User Review and SRR are described under paragraph 1.3., Reviews.

1.1.4. Input into HQ AFMC's data system. Executable requirements, determined in the SRR, are included in DPEM brochures reviewed during the Logistics Support Review (LSR). LSR validated requirements are depicted in the MP&E data base.

1.2. Responsibilities. There are several participants that have responsibilities in this process.

1.2.1. MAJCOM. The MAJCOM is responsible for developing a clear description of the required system capability and identifying deficiencies or improvements to the software. An authorized MAJCOM representative will sign the completed AFMC Form 230 (CG) after the User Review or the SRR, for which the requirement is discussed, acknowledging the proposed plan/solution to their requirement. The Air Force assigns responsibility for overall management of each system to a "lead command" to ensure that all requirements associated with every system receive comprehensive and equitable consideration. The lead command provides a primary input into the process of developing and maintaining a force structure with a balance of complementary capabilities, and it establishes a basis for rational allocation of scarce resources among competing requirements. For additional information on the lead command, see AFPD 10-9, *Operations - Lead Operating Command Weapon System Management* at **http://afpubs.hq.af.mil/pubfiles/af/ 10/afpd10-9/afpd10-9.pdf.**

1.2.2. SM. With the responsibility to provide the user requested capabilities, the SM has a central role in the SRRP. It is the responsibility of the SM to ensure that all change requirements are validated and that all cost, schedule, or operational impacts are understood. The SM works with both the MAJCOM and the SSO to conduct the User Review and SRR. The SM is responsible for ensuring that a methodology is used for converting software requirements into man hours, entering the required data into the SRA, and generating the forms. The SM shall retain all methodology documentation for converting software requirements into man-hours for a period of one year after completion of the task. The SM may delegate the entry of data into the SRA to another organization such as the SSO. The SM, as the chairperson of the Configuration Control Board (CCB), is responsible for approval of all configuration changes to the software. This responsibility can be delegated to the chairperson of the Software Configuration Control Sub-Board (SCCSB). The AFMC Form 230 (CG) may be used by the SCCSB to approve configuration changes by signing the form. In support of the Assurance of OSS&E, the chief engineer or lead engineer of the weapon system or end item, or as delegated, will sign the AFMC Form 230 (CG). The SM is responsible for obtaining information on software requirements that will be worked by contractors funded by EEIC 56000.

Note: To ensure that the latest version of the SRA is being used, download the copy available at **https:// wwwmil.robins.af.mil/logistics/DPEM/DPEM_Software_Rqmts_App.htm** .

1.2.3. SSO. The SSO will accomplish the maintenance actions to provide the user's requested capability. This organization will be responsible for performing the up-front analysis, and documenting the analysis and proposing the solution on the AFMC Form 230 (CG). The SSO will use a methodology to convert software requirements into the man hours shown on the AFMC Form 230 (CG) and will document the methodology used to support these requirements. The SSO will provide the documentation to the SM for retention. The SSO will participate in the User Review and SRR. The SSO will perform the software maintenance tasks only after approval and funding are secured.

1.3. Reviews**.** There are two reviews within the SRRP-- the User Review and the SRR. Although reviews are beneficial to all parties, all reviews are scheduled at the request of the funding source and are not mandatory.

1.3.1. User Review. Once the software change requirements are validated and all cost, schedule, or operational impacts are understood, the information is reviewed by the MAJCOM, the SM, and the SSO. These reviews ensure each of the participants have a mutual understanding of the customer's requirements, what is involved in obtaining the required capability, and the impacts of the changes to the system. Discussions focus on how the proposed changes support valid operational requirements or correct deficiencies. This information will help the user determine the priority of the proposed changes and when they will be incorporated into the weapon system. The User Review is held as required. This review is based on system/program requirements. Depending on the program, this review may be on an as needed basis, or routinely scheduled on a weekly, monthly, or quarterly basis.

1.3.2. Software Requirements Review (SRR). The SRR is an annual review where the SRRP participants have the opportunity to discuss all software support requirements. This review ensures the consolidated planned work requirements reflect the actions necessary to satisfy the customer's operational requirement. The SRR may be conducted by any means that is deemed appropriate by the MAJCOM (e.g., video teleconference (VTC), face-to-face, teleconference,

etc.). At the request of the customer, each Air Logistics Center (ALC) supplier will arrange for a SRR, in the requested format. The Software Support Requirements Package (SSRP) is the prescribed document to facilitate the SRR. Completion of the SRR determines which work requirements are correctly defined, coordinated, documented, and validated. These approved requirements are then used to produce the financial requirements identified in the LSR brochure as part of the DPEM process. An approved and properly coordinated AFMC Form 230 (CG) must support all software requirements in DPEM brochures.

1.4. Documentation. With the complexity of the systems and a wider range of missions for existing systems, software changes are inevitable. These changes are typically identified as enhancements or correction of deficiencies to the existing system capabilities and are the primary input to the Requirements Identification step of the process.

1.4.1. Candidate Requirements List. The candidate requirements list identifies the candidate requirements (change proposals) which are identified for a system to perform assigned missions. This list is a product of the Requirements Identification activity and is the responsibility of the SM for analysis and possible incorporation into the system.

1.4.2. The AFMC Form 230 (CG) and AFMC Form 231 (CG) will be used as the vehicles to document the analysis results and coordination between the participants. Results of the analysis are annotated on the AFMC Form 230 (CG) with the details of the individual tasks documented on the AFMC Form 231 (CG). These forms are not considered to be legal funding documents but are used as part of the data set to justify the information in the LSR Brochure and help prioritize requirements.

1.4.2.1. AFMC Form 230 (CG) will be used as a primary data source during both the User Review and the SRR. Completion of the SRR should result in the user's concurrence of the software change requirement. Concurrence is noted by signature on the AFMC Form 230 (CG). With concurrence of the requirement by the participants, the planning, budgeting, and subsequent validation of the maintenance requirements can be accomplished. The forms are also used to plan and budget for future requirements. This ensures that resources are available to perform requested software maintenance when a block cycle change or other changes are ready for execution or a new system is fielded.

1.4.2.2. Each SM uses a particular form to record SCCSB approval to make changes to a configuration baseline. The AFMC Form 230 (CG) may also used to record the SCCSB approval to make changes to a configuration baseline.

1.4.3. The SM will retain the documentation (artifacts such as cost estimation worksheets, spreadsheets, historical data, etc) showing the methodology used to convert the software requirements into man-hours for a period of one year after completion of the task. This documentation should track with the requirements shown on the AFMC Form 230 (CG).

1.4.4. Software Support Requirements Package (SSRP). The SSRP is the only required document for the SRR. Because this document is in support of individual customers, each lead command customer will receive an SSRP, with a Summary Cover Page, that covers those systems for which that customer is responsible. The SSRP consists of a yearly compilation of the AFMC Form 230 (CG), sorted by system for a given MAJCOM. The SSRP will be delivered to the appropriate MAJCOMs 90 days prior to the annual LSR. The ALC suppliers are responsible for developing

the SSRP. Additional information on the SSRP is available in Chapter 97 of the AFMC Financial Management Reference System.

2. Changes. Proposed changes to this instruction should be sent to HQ AFMC/ENP, BLDG 262, RM N145, 4375 Chidlaw Road; Wright-Patterson AFB, OH 45433-5006, for review. Proposed changes should include: proposed rewrite of the paragraph and an explanation of why the change should be made.

3. AFMC Forms Prescribed. AFMC Form 230 (CG), **Software Support Requirements Documentation**, and AFMC Form 231 (CG), **Software Task Detail Description**.

JAMES A. PAPA, SES
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Attachment 1

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

Abbreviations and Acronyms

ALC—Air Logistics Center

ATE—Automated Test Equipment

CCB—Configuration Control Board

CDM—Contract Depot Maintenance

C-E—Communications-Electronics

CG—Computer Generated

CLS—Contractor Logistics Support

DM—Depot Maintenance

DPEM—Depot Purchased Equipment Maintenance

EEIC—Element of Expense/Investment Code

EW—Electronic Warfare

ICS—Interim Contractor Support

LSR—Logistics Support Review

MAJCOM—Major Command

MP&E—Maintenance Planning and Execution

OFP—Operational Flight Program

OS—Operation Support

OSS&E—Operational Safety, Suitability and Effectiveness

PDO—Publishing Distribution Office

PPBS—Planning, Programming, and Budgeting System

RDT&E—Research, Development, Test and Evaluation

SCCSB—Software Configuration Control Sub-Board

SM—Single Manager

SRA—Software Requirements Application

SRR—Software Requirements Review

SRRP—Software Requirements Review Process

SSO—Software Support Organization

SSRP—Software Support Requirements Package

TPS—Test Program Set

UAR—Users Annual Review

UUT—Unit Under Test

VTC—Video Teleconference