

**1 AUGUST 2000**

**Maintenance**

**SYSTEMS REQUIREMENTS AND  
IMPLEMENTATION APPROVAL PROCESS**



**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFPD63-11, *Modification System*, and AFI63-1101, *Modification Management*, by addressing a process for management oversight/insight of changes to non-Acquisition Category I acquisition programs and existing systems. The described processes will also support Acquisition Category I (ACAT I) systems or system of systems independently acquired and requiring interoperability or integration with existing system architectures, as well as facilitating spiral development efforts. It establishes procedures for managing a Systems Requirements and Implementation Approval process for all Air Force Space Command (AFSPC) aircraft, space, missile systems, equipment and components supported by Air Force Materiel Command. AFSPC units may develop supplements or local operating instructions to implement this instruction. If supplemented, a coordination copy will be sent to HQ AFSPC/CE/DO/DR/LG/SC. This instruction applies to organizations that manage both temporary and permanent modifications to operationally accepted weapon systems owned or managed by AFSPC. Each AFSPC Office of Primary Responsibility (OPR) is accountable to their customers throughout the system life cycle for requirements documentation, validation and approval as well as review of associated acquisition, sustainment and logistics changes to include cost, schedule, performance, form, fit and function. OPR accountability includes the recognition of each customer's need dates and timelines for any required response documentation. OPRs will be sensitive to the customer's requirements and adhere to established processes and instructions to ensure customer satisfaction as well as adherence to Total Quality Management/Quality Air Force principles. Each OPR is empowered with authority over both internal and external requirements review/configuration control decisions, as well as resources required throughout the system or product's life cycle. Their responsibilities are outlined within this instruction. This instruction applies to selected Air National Guard and Air Force Reserve Command units.

**SUMMARY OF REVISIONS**

This publication has been rewritten in its entirety to provide guidance on managing approval for proposed changes and modifications. It describes standard processes and a common 2-tier configuration control oversight framework for all AFSPC Weapon Systems.

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## Chapter 1

### RESPONSIBILITIES

**1.1. General.** This instruction outlines procedures for approving requests for modifying AFSPC managed/owned systems. Various processes apply to changing hardware or software, weapon systems or information systems from identification of need through evolutionary acquisition and disposition. This instruction describes guidance for processing requirements derived from major defense acquisition programs (MDAPs) as well as the need for modernization and sustainment of existing AFSPC infrastructures. The Systems Requirements and Implementation Approval effort includes identifying, documenting, validating, approving and funding changes to AFSPC systems. Configuration Control (CC) includes controlling functional changes to an item and/or system. CC shall provide a complete audit trail of decisions and design modifications to AFSPC systems. The Configuration Management (CM) effort of the Air Force Materiel Command (AFMC) System Program Director (SPD), or other supporting agency, includes providing a complete audit trail of decisions, design modifications, and documentation changes, recording the configuration of an item and controlling an item's functional and physical characteristics. This instruction clarifies the roles of each OPR and functional area. A glossary is provided at [Attachment 1](#).

1.1.1. Change Control. AFSPC will review proposed changes to systems that have been operationally accepted via Initial Operating Capability turnover. For systems not turned over to AFSPC, AFMC or the appropriate supporting agency will control the change process until acceptance by AFSPC. Details of change control responsibilities for each AFSPC operational system are described in paragraph [1.4](#) and [Chapter 2-8](#).

1.1.1.1. Requests for changes to operationally accepted systems will be described using appropriate requirements documentation (e.g., Universal Documentation System, AF Form 1067, **Modification Proposal**, or equivalent) and will be processed for validation and approval as described in this instruction or in AFSPC supplements to this instruction. Change proposals may be initiated by AFSPC organizations, other using agencies, AFMC or other supporting agencies.

1.1.2. Funding. AFSPC approval boards (e.g., Requirements Validation Board (RVB), Operations Approval Panel (OAP), System Requirements Council (SRC), Missile Facility Alteration Panel (MFAP), Modification Review Board (MRB), Operations Control Board (OCB), Requirements Review Council (RRC), as appropriate) will review funding sources, appropriations and recommended priority as part of the change approval process. Proposed changes may be advocated at the AFSPC approval board by the originator. Subsequent OPR tracking of funded and unfunded needs is described in Chapters 2-8.

1.1.2.1. Funding thresholds and approval authority for mission need changes to establish a new operational capability or exploit an opportunity to enhance performance or reduce costs on an existing acquisition program or system are described in AF110-601, *Mission Needs and Operational Requirements Guidance and Procedures* (see [Table 1.1](#)).

1.1.2.2. AFSPC approval authority for proposed changes with implementation solutions below \$10M may be delegated to subordinate groups or wings as described in Chapters 2-8 or supplements to this instruction.

1.1.3. Software Support. AFSPC is responsible for performing Level 1 support. AFMC or other supporting agencies are responsible for providing Level 2 support. [Attachment 2](#) further explains Level 1 and 2 support.

1.1.4. Hardware Support. AFSPC has responsibility for organizational level maintenance. AFMC or other supporting agencies are responsible for providing depot level maintenance.

**Table 1.1. Funding Thresholds and Approval Levels.**

Production Status	Dollar Amount	Requirements Document	Approval Authority
Out-of-Production	\$10M - \$65M in procurement OR \$10M - \$14M in Research, Development, Testing and Evaluation (RDT&E)	AF Form 1067 (or equivalent), with Requirements Correlation Matrix (RCM)	HQ USAF/ XOR
Out-of-Production	< \$10M in procurement OR < \$10M in RDT&E	AF Form 1067 (or equivalent)	Major Command (MAJCOM)

1.1.5. Operational Acceptance. Responsibilities for development, planning and execution of Force Development Evaluation (FDE), Follow-on Operational Test and Evaluation, or Qualification Test and Evaluation as a prelude to, or subsequent to, implementation of modifications are described in AFSPCI99-101, *Operational Test and Evaluation for Space and Intercontinental Ballistic Missile (ICBM) Operations*. See AFSPCI99-101 for further guidance and acceptance procedures. Operational and acceptance testing that may affect ICBM Real Property/Real Property Installed Equipment (RP/RPIE) will be conducted in accordance with AFSPCI32-1005, *Intercontinental Ballistic Missile (ICBM) Real Property/Real Property Installed Equipment Responsibilities* (see [Chapter 5](#)).

1.1.6. Configuration Management. The AFMC SPD or other supporting agency is responsible for configuration management of AFSPC systems in accordance with (IAW) DoD 5000.2-R, *Mandatory Procedures for Major Defense Acquisition Programs and Major Automated Information System Acquisition Programs*; MIL-STD-973, *Configuration Management*; and AFI63-1101. Security accreditation IAW AFI33-202, *Computer Security Program*, must be addressed as a result of any developmental changes to operational automated information systems. AFSPC will be notified whenever systems undergo a change affecting integrity of the system's security posture or reaccreditation is required.

1.1.7. Excess/Deactivated Equipment. Organizations removing equipment will report national stock number, part number, noun and quantity to HQ AFSPC/LGSR.

## 1.2. References. For a complete listing, see [Attachment 1](#).

## 1.3. Joint Programs:

1.3.1. AFSPC serves as Lead Command and Air Force is Lead Service. Any proposed change that could affect another using nation's, command's or service's equipment must comply with lead operating command guidance in AFPD10-9, *Lead Operating Command Weapon Systems Management*, and AFI 10-901, *Lead Operating Command – Communications and Information Systems Manage-*

*ment*, and be coordinated with that agency's approval board(s) before receiving HQ AFSPC approval. When a joint program change request is received, the appropriate AFSPC validation or approval board will send a copy of the change to all affected commands and services. Once all affected agencies have responded, the proposed change will be placed on the appropriate AFSPC board agenda. If the proposed change is approved, it is forwarded to applicable AFMC SPD or other supporting agency for processing. If the proposed change is disapproved, it will be returned to the originating agency with rationale for the disapproval. In either case, an information copy of the AFSPC approval board action will be provided to the affected agencies.

1.3.2. AFSPC serves as Lead Command but Air Force is not Lead Service. Any proposed change that could affect any using command's equipment must be coordinated with that command's approval board(s) before it meets the AFSPC approval board. When a joint program change request is received, the appropriate AFSPC validation or approval board will send a copy of the change to all affected using commands for their validation. Once all affected using commands have responded, the proposed change will be placed on the appropriate AFSPC board agenda. If the proposed change is approved, it is forwarded to the appropriate supporting agency for processing. If the proposed change is disapproved, it will be returned to the originator with rationale for the disapproval. In either case, an information copy of the AFSPC approval board action will be provided to all affected using commands.

1.3.3. Air Force Space Command is not Lead Command. For those programs for which another agency is appointed as lead, HQ AFSPC shall approve/disapprove all proposed AFSPC change requests before they are submitted to the lead agency. HQ AFSPC shall submit the proposed changes to the lead agency and track its approval and implementation progress.

**1.4. System Requirements and Implementation Approval Process.** Proposed changes to AFSPC managed/owned systems are processed as shown in **Figure 1.1**. The sub-steps of this process are: change origination, validation, solution engineering and costing, AFSPC approval, Air Staff approval (if appropriate) and AFMC or other supporting agency implementation. AF Form 1067's will be processed IAW AFI63-1101. Chapters 2-8 describe details of the system requirements and implementation process as applicable to each AFSPC operational system.

1.4.1. Change Origination. AFSPC organizations, using agencies, AFMC or other supporting agencies may initiate, and send through the responsible Wing, requests for changes to AFSPC legacy infrastructure and weapon systems using prescribed requirements documentation for changes that fall within the funding thresholds described in paragraph **1.1.2.1**. All AF Form 1067's will be forwarded to HQ AFSPC/LGM, the AFSPC modification requirement office OPR. Proposed changes will next be forwarded to the appropriate AFSPC board for validation. Requests for changes derived from MDAP ACAT I requirements, or for changes to legacy infrastructure systems exceeding \$65M in procurement funding or \$14M in RDT&E funding (per AFI 10-601), will be documented by AFMC or other supporting agency based on AFSPC Operational Requirements Document (ORD) requirements.

1.4.2. Validation. The RVB, or equivalent, will review each proposed change to ensure the stated need is clearly described, a priority has been assigned, technical analysis is warranted and any effect on existing operations and maintenance activities is understood. Proposed changes that are not validated will be dispositioned through the responsible Wing to the originator. For AF Form 1067-proposed modifications, the RVB, or equivalent, will perform the AFSPC Configuration Review Board

*validation* function IAW AFI63-1101. Validated change requests will next be forwarded to AFMC, or the appropriate supporting agency, for an engineering and cost analysis.

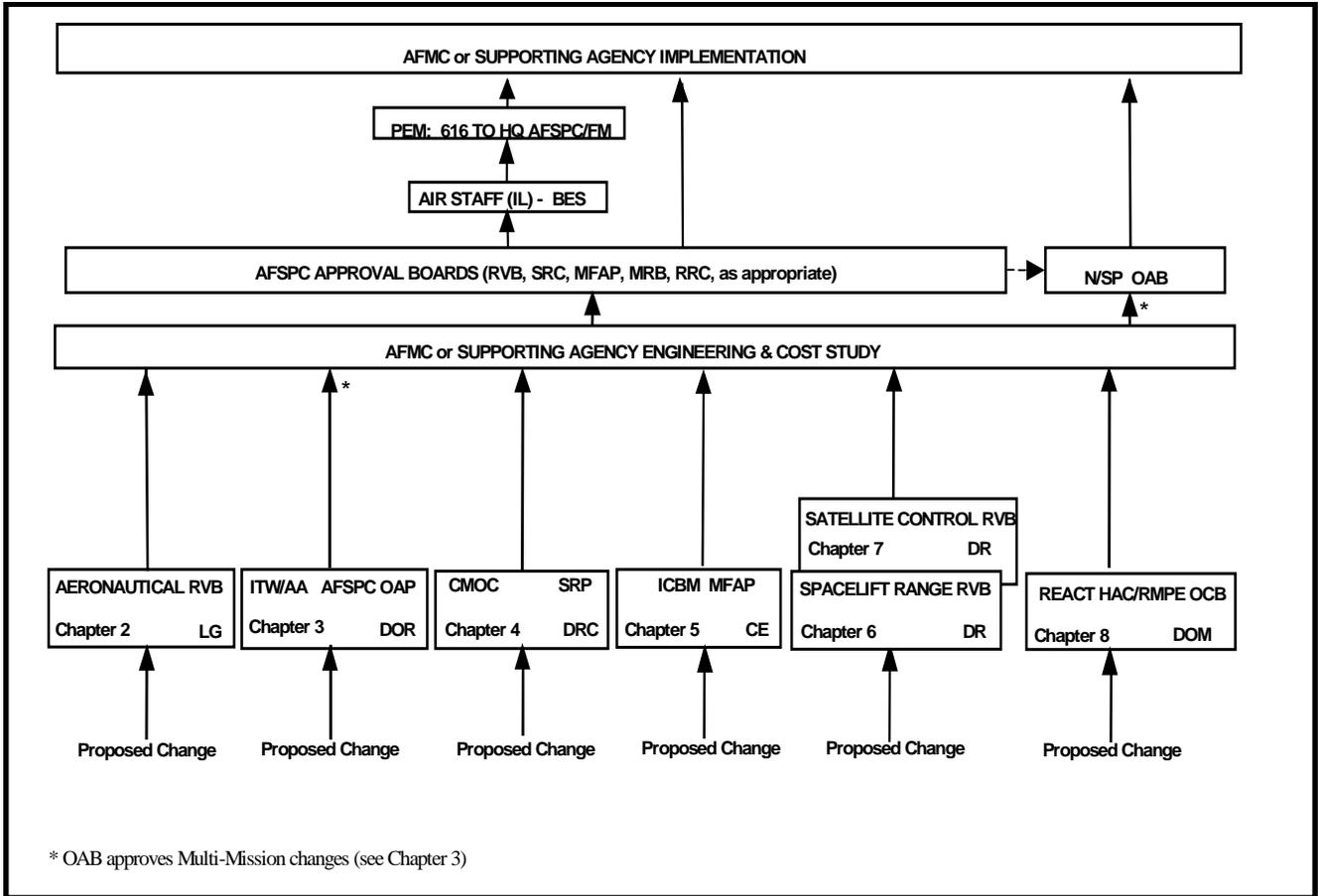
1.4.3. Solution Engineering and Costing. AFMC or other supporting agency will perform a technical analysis of the proposed change, develop alternatives and recommend an engineering solution. A cost estimate and description of the recommended solution will be provided to the appropriate AFSPC approval board in order to obtain implementation approval. Integrated Tactical Warning and Attack Assessment (ITW/AA) software version release changes affecting multi-mission systems will be approved by the ITW/AA Operations Approval Board (OAB) prior to System Program Office (SPO) implementation (see [Chapter 3](#)).

1.4.4. AFSPC Approval. Depending on operational system to be changed, scope of the proposed change and funding required, the appropriate AFSPC approval board (e.g., RVB, SRC, MFAP, MRB, OCB or RRC) will review each proposed change, recommended solution and funding source. The HQ AFSPC/DR-chaired MRB (which replaces the HQ AFSPC Mod Ranking Panel) will function as the AFSPC Configuration Review Board IAW AFI63-1101 for *approving* AF Form 1067 modifications. Proposed changes that are not approved will be dispositioned through the responsible Wing to the originator. All approved change requests not requiring Air Staff approval or further funding action will be coordinated with the originating organization (e.g., users, Wings, etc.) and then forwarded to AFMC, or the appropriate supporting agency for implementation.

1.4.5. Air Staff Approval. Proposed changes validated by HQ AFSPC, but requiring Air Staff approval in accordance with AFI10-601, will be forwarded to HQ USAF/XOR. Funding requests will be submitted to USAF/IL for the budget estimate submission. For AFSPC Organizational Activity Code funds, the appropriate Air Staff Program Element Manager (PEM) submits an AF Form 616, Fund Cite Authorization (FCA) to HQ AFSPC/FM. Upon receipt of funding, HQ AFSPC/FM will notify the appropriate AFSPC PEM and forward the AF Form 616 to the implementing AFMC organization or supporting agency in the execution year. Proposed changes not approved and funded by the Air Staff will be dispositioned to the originator by the appropriate AFSPC validation board.

1.4.6. Implementation. Following receipt of approval and funding authorization for a proposed change and implementation solution, AFMC or the appropriate supporting agency will begin configuration management (including Configuration Control Board activities) and commence implementation. Implementers will work the prioritized and funded modifications in the year and precedence set by the AFSPC or Air Staff approval authority. AFSPC and/or using agencies will review implementation activities from inception through testing and acceptance.

Figure 1.1. System Requirements and Implementation Approval Process.



## Chapter 2

### AERONAUTICAL SYSTEMS

**2.1. Scope .** The Aeronautical Systems RVB is chaired by the HQ AFSPC/LGM, Maintenance Division. The approach is to review and ensure the visibility and control with the ICBM SPO configuration information necessary for long-term acquisition and sustainment. Proposed modifications that may affect ICBM RP/RPIE will be processed in accordance with **Chapter 5**.

**2.2. Systems Covered.** The Aeronautical Systems RVB reviews and validates modifications and waivers pertaining to aircraft (UH-1N Helicopter fleet), missiles (Minuteman III & Peacekeeper in Minuteman Silo), Spacelift Atlas, Delta, Titan, Evolved Expendable Launch Vehicle, associated munitions and related support and training equipment.

#### **2.3. Background:**

2.3.1. The Aeronautical Systems RVB provides validated change requests to the Ogden Air Logistics Center (OO-ALC/LM) for accomplishment of the ICBM, Spacelift and Munitions missions. Helicopter mission change requests are forwarded to the Warner-Robbins Air Logistics Center (WR-ALC/LUH).

2.3.2. The AFMC single manager for the Systems RVB is OO-ALC/LM at Hill AFB. The AFMC single manager for Helicopters is WR-ALC/LUH at Robins AFB GA. These SPOs provide day-to-day systems engineering, modification management, technical order review, etc., support for Aeronautical Systems through organic or contract resources.

2.3.3. AFSPC requirements for managed systems are documented using the AF Form 1067. HQ AFSPC will assign a modification number to each AF Form 1067 for tracking purposes and log in the HQ AFSPC/LGM database. The AF Form 1067 is forwarded to the SPO for review and/or approval in accordance with paragraph **2.4.2**. The SPO will provide a technical analysis and cost estimate for HQ AFSPC/LGM coordination or validation and approval. Each SPO-coordinated and signed AF Form 1067 must include a complete data package (see A2.15 and **Attachment 3**), to meet AFSPC validation criteria.

#### **2.4. Aeronautical RVB Responsibilities:**

2.4.1. Receive SPO inputs to Cost and Engineering Analysis/Data package including existing weapon system baseline data, new program requirements, as well as information from sustainment activities. The RVB will assess proposed changes for impact to current weapon system baselines.

2.4.2. All modification proposals will be forwarded to the SPO for staffing and processing IAW Figure 2.1, except those where OO-ALC/LM has delegated approval authority.

2.4.2.1. Modification proposals that are considered MAJCOM unique may be reviewed by the SPO Configuration Control Board (CCB). This review allows the using MAJCOM to proceed with the modification process coordinating the necessary action with the SPD and makes the using MAJCOM financially responsible for the funding of the modification.

2.4.2.2. Low cost permanent modification requests (less than \$25K) are submitted to the SPO (see paragraph 2.3.2.) via AF Forms 1067 for approval (see Table 2.2.). Low cost modifications have a total estimated cost under the AF Form 1067 threshold established in AFI10-601 and AFI63-101. Total estimated cost includes engineering, trial installation, functional flight test, kit proof, kits, installation, support equipment, technical data, software training devices, etc.

2.4.3. Modification proposals may be disapproved by the evaluating OPR (see paragraph 2.4.2.) at only the SPO or HQ level.

2.4.4. Assign a HQ AFSPC/LGM action officer to evaluate each proposal. If an AF Form 1067 is received from the wings or SPO, provide a copy to the supporting organization for a rough cost estimate, feasibility assessment, possibility of combining AF Forms 1067, etc. (See Attachment 3 for details).

2.4.5. All permanent aerospace modifications will be approved by HQ AFSPC/LGM. Permanent modifications are permanent changes to the configuration item(s). Reasons to change configuration items are to correct safety or material deficiencies, to improve Reliability and Maintainability, to add or remove capability or to reduce life-cycle costs.

2.4.6. Properly staff modification packages from HQ AFMC within HQ AFSPC and with 20 AF/LGM before they are placed on the RVB agenda. Receive, suspense and distribute AF Forms 1067 for OPR review.

2.4.7. Assign an AFSPC tracking number for HQ AFSPC-generated AF Forms 1067.

2.4.8. Modification proposals presented to the SPO or the HQ for an initial engineering evaluation and costing will not state or imply AFSPC has performed final validation or approval of the proposed modifications.

2.4.9. Modifications which began as low cost modifications but grow to exceed the AF Form 1067 total cost threshold (established in AFI10-601, Table 2.1 and AFI63-1101) will require all documentation prescribed in paragraph 2.4.1. prior to HQ AFSPC/LGM review and subsequent signoff or recession.

**Table 2.1. Funding Thresholds and Approval Levels.**

Production Status	Dollar Amount	Requirements Document	Approval Authority
Out-of-Production	< \$10M in procurement OR < \$10M in RDT&E	AF Form 1067	MAJCOM

**Table 2.2. AFMC/SPO/20 AF Generated AF Form 1067(s).**

Production Status	Dollar Amount	Requirements Document	Approval Authority
Out-of-Production	< \$25K in procurement OR < \$25K in RDT&E	AF Form 1067	SPO + AFSPC review

2.4.10. When AFSPC is the “lead command” for the weapon/equipment system, the modification proposal will be forwarded to HQ AFSPC for review. This review is necessary to ensure the modifi-

cation does not adversely affect the weapon system interoperability, maintainability or mobility planning. The modification will be reviewed for possible wing-wide implementation.

2.4.11. Modification proposals that are approved by the SPO CCB for wing-wide implementation will be advocated by HQ AFSPC and will be included in the respective Mission Area Plan.

2.4.12. Disapproved modifications will be returned with rationale to the originator. (See paragraph 1.4.4.)

## 2.5. Wing/Group Responsibilities :

2.5.1. Ensure AFSPC managed/owned systems are not modified without proper approval.

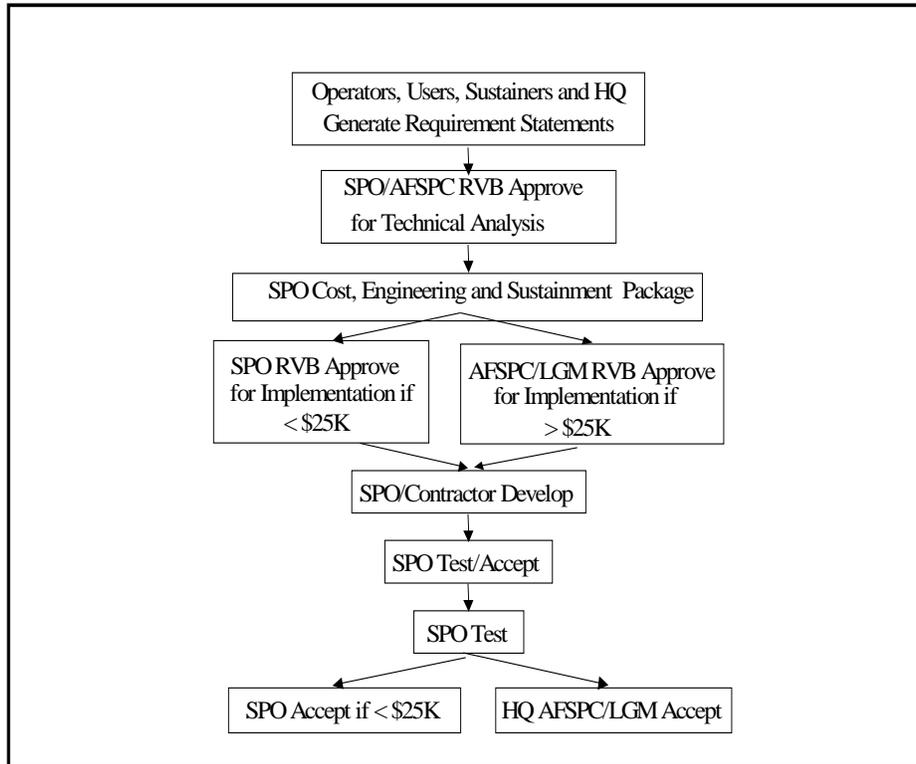
2.5.2. Provide a representative, if desired, to HQ AFSPC/LGM RVB meetings to advocate proposed modifications.

2.5.3. Space wings will establish a process to review proposed modifications submitted by their units (see paragraph 2.4.). ICBM wings will ensure all AF Forms 1067 are reviewed by Quality Assurance prior to submission to HQ AFSPC/LGM. Space wings will forward AF Forms 1067 to the wing contracting office to ensure that proposed changes do not impact existing Launch Services or Launch Base Operations contracts.

**Table 2.3. HQ AFSPC/LGM and SPO RVB Approval Levels.**

<b>MODIFICATION PROPOSAL CRITERIA</b>	<b>HQ AFSPC/LGM RVB</b>	<b>SPO RVB</b>
Total cost is less than \$25K	Information Copy	Approval
Modification corrects a Deficiency	Information Copy	Approval
Implementation via Level 1 Software Change or Organizational Maintenance	Information Copy	Approval
Total cost is greater than \$25K	Approval	Initial Validation with Data Package
New Mission, Major Enhancement or requires Change in Organizational Support	Approval	Initial Validation with Data Package
Involves change to ORD or Operations Concept	Approval	Initial Validation with Data Package
Major Safety or Security Issue	Approval	Initial Validation with Data Package

Figure 2.1. Requirements and Implementation Approval Process for Aeronautical Systems.



## Chapter 3

### INTEGRATED TACTICAL WARNING AND ATTACK ASSESSMENT (ITW/AA) SYSTEMS

**3.1. Scope .** This chapter and related attachments specify the *current* ITW/AA change control responsibilities and procedures for HQ AFSPC. This chapter implements policies directed in NUI10-21, *Change Control Management Process for the Integrated Tactical Warning and Attack Assessment Systems*. These policies and procedures apply to all HQ AFSPC acquired, developed and/or maintained computer software, hardware, firmware and communications media (including those developed or delivered under contract), and those systems acquired, developed and maintained by AFMC for AFSPC. *Note:* These policies and procedures may change upon award of a Total System Performance Responsibility type contract for management of ITW/AA systems.

**3.2. Systems Covered.** The ITW/AA AFSPC Operations Approval Panel reviews and validates changes and modifications to the systems listed in NUI10-21, Attachment 2. The Integrated Weapon System Database (IWSD) can be accessed on the Internet. Request user accounts by sending electronic mail to: [iwsd@cisf.af.mil](mailto:iwsd@cisf.af.mil).

#### 3.3. Background:

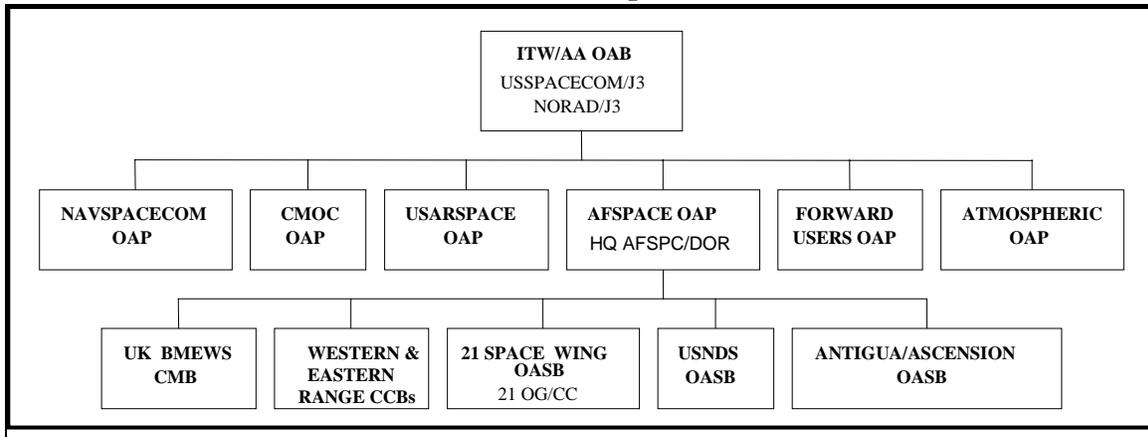
3.3.1. The primary function of the ITW/AA system is to provide warning and assessment of ballistic missile, atmospheric and space based attacks against North America; with a secondary function of warning (theater warning) of ballistic missile or space attack against United States interests worldwide; and warning and assessment of attacks against U.S. and Allied space assets. It is imperative that the integrity of the ITW/AA system, which provides this warning information, is carefully managed so as to eliminate any potential for false or ambiguous information leading to an erroneous assessment or decision by North American Aerospace Defense Command (NORAD), United States Space Command (USSPACECOM) or National Command Authorities.

3.3.2. The ITW/AA functional manager is SP/J33W-FM. The Cheyenne Mountain Complex (Chapter 4) is funded and managed by HQ AFSPC/DRC and provided to the unified command for accomplishment of the NORAD and USSPACECOM missions. ITW/AA consists of missile warning and space surveillance systems/sites, processing and data correlation centers, sensor sites, information displays, communications systems and other geographically separated locations that directly feed into the ITW/AA system. It also includes all interfaces with non-ITW/AA systems. ITW/AA is a “system of systems” that requires close coordination with all its stakeholders. For this reason, membership of the change approval boards contains representatives from the various commands (AFSPC, AFMC, NORAD and USSPACECOM). This total involvement of the ITW/AA community ensures the ITW/AA system continues to meet the requirements of this multi-command, multi-mission, integrated Command and Control (C2) network as it evolves to meet new threats.

#### 3.4. Boards:

3.4.1. A series of interrelated boards (see [Figure 3.1.](#)) are established to ensure proper review of modification/upgrades to the ITW/AA system. The boards/panels supporting the AFSPC change control process and their authority, expertise and functions are as follows:

Figure 3.1. HQ AFSPC OAP and OASB Relationships.



3.4.2. The HQ AFSPC OAP. The OAP is chaired by HQ AFSPC Director of Operations Force Enhancement Division (DOR). This OAP is subordinate to the NORAD/USSPACECOM ITW/AA OAB. HQ AFSPC/DORC is the secretariat for the AFSPC OAP. The AFSPC OAP meets on an as required basis and is the final approval authority for changes impacting systems under more than one AFSPC Operations Approval Sub-Board (OASB), including the United Kingdom (UK) Ballistic Missile Early Warning System (BMEWS) Configuration Management Board (CMB). AFSPC OAP is the executive body of the Configuration Control Manager (CCM) responsible for ensuring the operational integration and integrity of all systems supporting the ITW/AA System for which AFSPC is responsible. In accordance with guidelines in this instruction, the AFSPC CCM performs the following functions:

3.4.2.1. Establishes procedures and manages change processes to include:

3.4.2.1.1. Approval/disapproval of requirements and ensuring proper change identification.

3.4.2.1.2. Ensuring proposed permanent or temporary changes to AFSPC ITW/AA systems are documented using NORAD/USSPACECOM Form 10, **Standard Change Form (SCF)**.

3.4.2.1.3. Ensuring SCF status is maintained in the ITW/AA Consolidated SCF database.

3.4.2.1.4. Establishment of mission impact and priority of changes (emergency, urgent, routine). *Note:* The OAP determines implementation time frames for each change priority.

3.4.2.1.5. Providing SCFs to component command, responsible agencies or implementing organization for cost and resource estimates, technical analysis, proposed solution(s), risk assessment, recommendation(s), schedule, corollary impacts and implementation activities.

3.4.2.1.6. Evaluation and/or revalidation of a requirement, proposed solution(s) and implementation decision.

3.4.2.1.7. Documentation of proposed changes for inclusion into version releases or submittal of recommendation for vertical releases.

3.4.2.1.8. Identification and tasking of responsible organizations to take specific actions necessary to support implementation of operational changes. Ensures oversight of implementing organization's configuration management throughout the system's life cycle.

3.4.2.1.9. Establishes OASBs and designated lower level CCMs involved with individual systems. *Note:* Lower level boards or panels may be established or disbanded as deemed necessary to support the OAP responsibilities listed above.

3.4.2.1.10. Coordinates among other CCMs to identify and verify system requirement or operational change implementation impacts. All inter-OAP impacts are elevated to the OAB.

3.4.2.2. The OAP secretariat (HQ AFSPC/DORC) is the point of contact for all AFSPC changes required by internal and external agencies, such as USSPACECOM or NORAD. The AFSPC OAP secretariat has the following responsibilities:

3.4.2.2.1. Provides copies of agendas, minutes and SCFs being boarded by the OAP to the ITW/AA OAB, subordinate boards and lateral panels.

3.4.2.2.2. Provides copies of all HQ AFSPC generic SCFs to the Systems Engineering Technical Group (SETG) for evaluation and identification of system impacts.

3.4.2.2.3. Informs subordinate OASBs of potential impacts to systems under their responsibility reported by SETG.

3.4.2.2.4. Identifies changes requiring action at the ITW/AA OAB.

3.4.2.2.5. Supports the Vertical Release process via the following actions:

3.4.2.2.5.1. Ensures each candidate change on the list has been thoroughly staffed and approved by the OAP and subordinate OASBs.

3.4.2.2.5.2. Ensures representatives of each system acknowledge participation in the Vertical Release or justify nonparticipation.

3.4.2.2.5.3. Ensures hardware and acquisition candidate changes with long lead times are briefed to the OAB for pre-approval for scheduling on an approximate, future version release.

3.4.2.2.5.4. Provides copies of all approved SCFs, via OAP agendas and minutes, to HQ USSPACECOM/J6C for certification actions.

3.4.2.3. The following boards are subordinate to the HQ AFSPC OAP:

3.4.2.3.1. The 21 SW OASB, chaired by 21 OG/CC, is one of five OASBs subordinate to the HQ AFSPC OAP. 21 OSS serves as the secretariat for the 21 SW OASB. 21 LSS/LGMK serves a support role, ensuring all SCFs are in the ITW/AA database and have met all prior requirements before being sent to the secretariat for boarding. This OASB has final approval authority for all software changes that impact only 21 SW ITW/AA systems. Also, the 21 SW OASB has final approval authority for hardware changes under \$1M, as long as additional funding is not required from HQ AFSPC. The OASB also acts as an advisory board to AFSPC OAP for changes impacting BMEWS Site III.

3.4.2.3.1.1. The 21 SW OASB subordinate Operations Approval Review Boards (OARBs) are:

3.4.2.3.1.1.1. BMEWS I OARB, 12 SWS.

3.4.2.3.1.1.2. BMEWS II OARB, 13 SWS.

3.4.2.3.1.1.3. PARCS OARB, 10 SWS.

3.4.2.3.1.1.4. PAVE PAWS EAST OARB, 6 SWS.

3.4.2.3.1.1.5. PAVE PAWS WEST OARB, 7 SWS.

3.4.2.3.1.1.6. EGLIN OARB, 20 SPSS.

3.4.2.3.1.1.7. GEODDS/MOSS OARB, 18 SPSS.

3.4.2.3.1.1.8. MSSS OARB, Det 3, 18 SPSS.

3.4.2.3.1.1.9. Space Based Infrared System (SBIRS) OARB, 2 SWS.

3.4.2.3.1.1.10. GLOBUS II (HAVE STARE) OARB, Vardo, Norway.

3.4.2.3.1.1.11. Data Distribution Center (DDC), CONUS Ground Station (CGS), European Ground Station (EGS) and Mobile Ground Station (MGS) OARBs.

3.4.2.3.1.2. The 21 Space Wing OASB is responsible for:

3.4.2.3.1.2.1. Supporting the AFSPC OAP through the OAP secretariat (HQ AFSPC/DORC) by:

3.4.2.3.1.2.1.1. Providing copies of OASB agendas and minutes to HQ AFSPC/DORC, HQ USSPACECOM/J6C and other agencies as requested or described in local procedures.

3.4.2.3.1.2.1.2. Identifying candidate changes for inclusion in vertical or system unique releases.

3.4.2.3.1.2.1.3. Identifying potential and actual impacts for the Vertical Release schedule.

3.4.2.3.1.2.1.4. Reviewing SCFs from HQ AFSPC OAP for impacts to 21 SW sites and identifying impacts back to the OAP.

3.4.2.3.1.2.1.5. Providing copies of SCFs with possible impacts to BMEWS Site III, to the UK BMEWS CMB for evaluation.

3.4.2.3.1.2.1.6. Reviewing SCFs from the UK BMEWS CMB, forwarding them to SETG and Electronic Systems Center Det 5/NDWCM for further review and reporting findings back to the UK BMEWS CMB.

3.4.2.3.1.2.2. Coordinating with other responsible agencies and tasking them for required SCFs, AF Form 1067s, AF Form 3215s **C4 Systems Requirements Documents, and Engineering Change Proposals (ECPs)**; tracking them and staffing only complete packages.

3.4.2.3.1.2.3. Ensuring copies of VCNs are provided to HQ AFSPC/DORC, HQ USSPACECOM/J6C and other agencies as requested or described in local procedures.

3.4.2.3.1.2.4. Sending a representative to the SETG.

3.4.2.3.2. The U.S. Nuclear Detonation (NUDET) Detection System (USNDS) OASB has final approval authority for changes to Integrated Correlation and Display Systems, Advanced Radiation Detection Units and Ground NUDET Terminals having no other impacts. This OASB has final approval authority for all software changes that impact only USNDS ITW/AA

systems. All hardware modifications to ITW/AA systems must be approved through the AFSPC OAP.

3.4.2.3.2.1. Subordinate to this OASB is the USNDS OARB.

3.4.2.3.2.2. The USNDS OASB chaired by SMC/CZZ is responsible for:

3.4.2.3.2.2.1. Supporting the HQ AFSPC OAP through OAP secretariat (HQ AFSPC/DORC) by:

3.4.2.3.2.2.1.1. Providing copies of OASB agendas, minutes and corresponding SCFs, for changes with possible impact to ICAD's Ground Communication Network interface, to HQ AFSPC/DORC, HQ USSPACECOM/J6C and other agencies as requested or described in local procedures.

3.4.2.3.2.2.1.2. Identifying candidate changes for inclusion in vertical or system unique releases.

3.4.2.3.2.2.1.3. Identifying potential and actual impacts for the Vertical Release schedule.

3.4.2.3.2.2.1.4. Reviewing SCFs from HQ AFSPC OAP for impacts to USNDS systems and identifying impacts back to the OAP.

3.4.2.3.2.2.2. Coordinating with other responsible agencies and tasking them for required SCFs, AF Form 1067s, AF Form 3215s and ECPs; tracking them and staffing only complete packages.

3.4.2.3.2.2.3. Ensuring copies of VCNs are provided to HQ AFSPC/DORC, HQ USSPACECOM/J6C and other agencies as requested or described in local procedures.

3.4.2.3.3. The Antigua/Ascension OASB is managed by the 45 SW. The Antigua/Ascension OASB has final approval authority for changes that have no ITW/AA impact. This OASB has final approval authority for all software changes impacting only Antigua/Ascension ITW/AA systems. Hardware modifications to ITW/AA systems must be approved by the AFSPC OAP.

3.4.2.3.3.1. The Antigua/Ascension OASB has no subordinate OARBs.

3.4.2.3.3.2. The Antigua/Ascension OASB has the following responsibilities:

3.4.2.3.3.2.1. Supports the HQ AFSPC OAP through OAP secretariat (HQ AFSPC/DORC) by:

3.4.2.3.3.2.1.1. Providing copies of OASB agendas, minutes and corresponding SCFs to HQ AFSPC/DORC, HQ USSPACECOM/J6C and other agencies as requested or described in local procedures.

3.4.2.3.3.2.1.2. Identifying candidate changes for inclusion in vertical or system unique releases.

3.4.2.3.3.2.1.3. Identifying potential and actual impacts for the Vertical Release schedule.

3.4.2.3.3.2.1.4. Reviewing SCFs from HQ AFSPC OAP for impacts to Antigua/Ascension and identifying impacts back to the OAP.

3.4.2.3.3.2.2. Coordinating with other responsible agencies and tasking them for required SCFs, AF Form 1067s, AF Form 3215s and ECPs; tracks them and staffs only complete packages.

3.4.2.3.3.2.3. Ensuring copies of VCNs are provided to HQ AFSPC/DORC, HQ USSPACECOM/J6C and other agencies as requested or described in local procedures.

3.4.2.3.4. Western and Eastern Range Configuration Control Boards (CCBs). The Western and Eastern Range CCBs are managed by SMC/CW and SMC/CW has final approval authority for changes with no ITW/AA impact. These CCBs have final approval authority for all software changes impacting only Western and Eastern Range ITW/AA systems. Hardware modifications to ITW/AA systems must be approved by the AFSPC OAP.

3.4.2.3.4.1. The Western and Eastern Range CCBs have no subordinate OARBs.

3.4.2.3.4.2. The Western and Eastern Range CCBs are responsible for:

3.4.2.3.4.2.1. Supporting the HQ AFSPC OAP through the OAP secretariat (AFSPC/DORC) by:

3.4.2.3.4.2.1.1. Providing copies of CCB agendas, minutes and corresponding SCFs to HQ AFSPC/DORC, HQ USSPACECOM/J6C and other agencies as requested or described in local procedures.

3.4.2.3.4.2.1.2. Identifying candidate changes for inclusion in vertical or system unique releases.

3.4.2.3.4.2.1.3. Identifying potential and actual impacts for the Vertical Release schedule.

3.4.2.3.4.2.1.4. Reviewing SCFs from HQ AFSPC OAP for impacts to the Western and Eastern Range CCBs and identifying impacts back to the OAP.

3.4.2.3.4.2.2. Coordinating with other responsible agencies and tasking them for required SCFs, AF Forms 1067, AF Form 3215s and ECPs; tracking them and staffing only complete packages.

3.4.2.3.4.2.3. Ensuring copies of VCNs are provided to HQ AFSPC/DORC, HQ USSPACECOM/J6C and other agencies as requested or described in local procedures.

3.4.2.3.5. The UK BMEWS CMB works collaterally with HQ AFSPC through mutually agreed upon terms for BMEWS Site III issues (Ref: Combined Logistics Support Agreement for Operation, Maintenance and Logistics Support of BMEWS Site III). The UK BMEWS CMB is the final approval authority for changes affecting only BMEWS Site III. The UK BMEWS CMB has final approval authority for all software changes impacting only BMEWS Site III ITW/AA systems. Hardware modifications to ITW/AA systems must be approved by the AFSPC OAP.

3.4.2.3.5.1. The UK BMEWS CMB has two subordinate boards: the BMEWS III Site Configuration Review Board and the BMEWS III CCB.

3.4.2.3.5.2. The UK BMEWS CMB provides copies of VCNs to HQ AFSPC/DORC/DORM, HQ USSPACECOM/J6C, 21 SW OASB and other agencies as requested or described in local procedures.

3.4.2.3.5.3. HQ AFSPC/DORM advocates BMEWS Site III changes at the OAP.

3.4.2.3.6. The SETG functions as the technical staff for the NORAD/USSPACECOM OAB and its subordinate OAPs and OASBs. The SETG is the focal point for all requirements affecting the ITW/AA and the Strategic and Nuclear Deterrence Command and Control (SND C2) SPO. The SETG identifies program determinations for all requirements, then hands-off the program unique requirements to the appropriate product line and determines the SPO Integrated Product Team (IPT) Lead for all multi-program requirements.

3.4.2.3.7. The SPO (Configuration Manager) will ensure Configuration Item information is provided to the IWSD Core Team for update to the IWSD upon acceptance of the modification.

### 3.5. Procedures:

3.5.1. Anyone in the ITW/AA community may generate a proposed hardware and/or software change using the forms identified below. *Note:* All changes based on any requirement (AF Form 3215, AF Form 1067, etc.) for an ITW/AA operational system must have an accompanying SCF submitted through the change control process.

3.5.1.1. Hardware. Proposed hardware changes to AFSPC OAP-managed ITW/AA systems are documented using an AF Form 1067, in addition to the SCF which must accompany each AF Form 1067. After approval at lower level boards, the AF Form 1067 is then forwarded to the HQ AFSPC OAP for validation (see [Figure 1.1](#)). The Single Manager will next provide an engineering solution for HQ AFSPC OAP consideration and approval. The SPO will assign a modification number to each HQ AFSPC OAP-approved AF Form 1067 for tracking purposes. Emergency hardware changes may be proposed to the HQ AFSPC OAP at any time. If approved, a backfill AF Form 1067 and SCF will be generated by the organization or Single Manager affected by the change.

3.5.1.2. Software. Proposed software changes are documented using the SCF. This form is forwarded to the appropriate OASB/OARB for initial requirements review. The OASB assigns a Universal Control Number (UCN) to each SCF. The complete package is then processed IAW NUI10-21, paragraph 5.

## Chapter 4

### CHEYENNE MOUNTAIN COMPLEX (CMC) SYSTEMS AND MISSION FORWARD USER SYSTEMS

**4.1. Scope.** The change management processes outlined below apply to the Integrated Tactical Warning/Attack Assessment (ITW/AA) mission systems located at CMC, the Alternate Missile Warning Center (AMWC) and Forward User locations. The non-mission system process outlined in this chapter applies only to the CMC. Oversight for both mission and non-mission system changes is provided by the Force Enhancement Mission Area Team through the HQ AFSPC-chaired Systems Requirements Panel. These processes interface with but do not apply to Missile Warning and Space System Surveillance systems. Below are the *current* processes to generate, approve and implement CMC, AMWC and Forward User ITW/AA hardware modifications and software revisions for ITW/AA mission and CMC non-mission systems. This guidance supplements existing NORAD/USSPACECOM change management policies and instructions, which take precedence in the event of policy conflicts. *Note:* These policies and procedures may change upon award of a Total System Performance Responsibility type contract for management of CMC and Mission Forward User systems.

**4.2. Systems Covered .** Nonsensor mission systems that constitute the ITW/AA system located at both the CMC, AMWC, and Forward User locations must use the process outlined in this chapter. Non-mission systems within the CMC are also covered by this chapter.

#### 4.3. Background:

4.3.1. CMC is funded and managed by HQ AFSPC/DRC and provided to the unified command for accomplishment of the NORAD and USSPACECOM missions. The CMC is the primary correlation center for ITW/AA data to provide early warning and characterization of potential threats to North America. It is a “system of systems” that requires close coordination with all space control and ITW/AA stakeholders. For this reason, membership of the change approval boards contains representatives from the various commands (AFSPC, AFMC, NORAD and USSPACECOM). This total involvement of the space control and ITW/AA community ensures the ITW/AA network continues to meet the requirements of this multi-command, multi-mission, integrated Command and Control network as it evolves to meet new threats.

4.3.2. The AFMC single manager for the ITW/AA system is the SND C2 SPO that is co-located with HQ AFSPC at Peterson AFB CO. The SPO provides day-to-day depot (systems engineering, modification management, spares, etc.) support for the CMC ITW/AA systems through either organic or contracted resources.

**4.4. CMC, AMWC and Forward User’s ITW/AA Mission Systems Change Management Requirements Documentation.** Anyone in the space, missile and air community may generate a proposed hardware and/or software change using the forms identified below:

4.4.1. Hardware. Proposed hardware changes to the ITW/AA system are documented using the AF Form 1067. CMC and AMWC changes will receive initial review and approval at the Cheyenne Mountain Operations Center (CMOC) OAP chaired by CMOC/J6. The AF Form 1067 is next forwarded to HQ AFSPC/DRC for validation (see [Figure 1.1.](#)). The SND C2 SPO will then provide an engineering solution for SRP/SRC consideration and approval (see [Figure 4.1.](#)). The SPO will assign

a modification number to each SRP/SRC approved AF Form 1067 for tracking purposes. Emergency hardware changes may be proposed to HQ AFSPC/DRC or the SRP at any time. If approved, a back-fill AF Form 1067 and SCF will be generated by the organization or Single Manager affected by the change. Each approved AF Form 1067 must have a corresponding SCF.

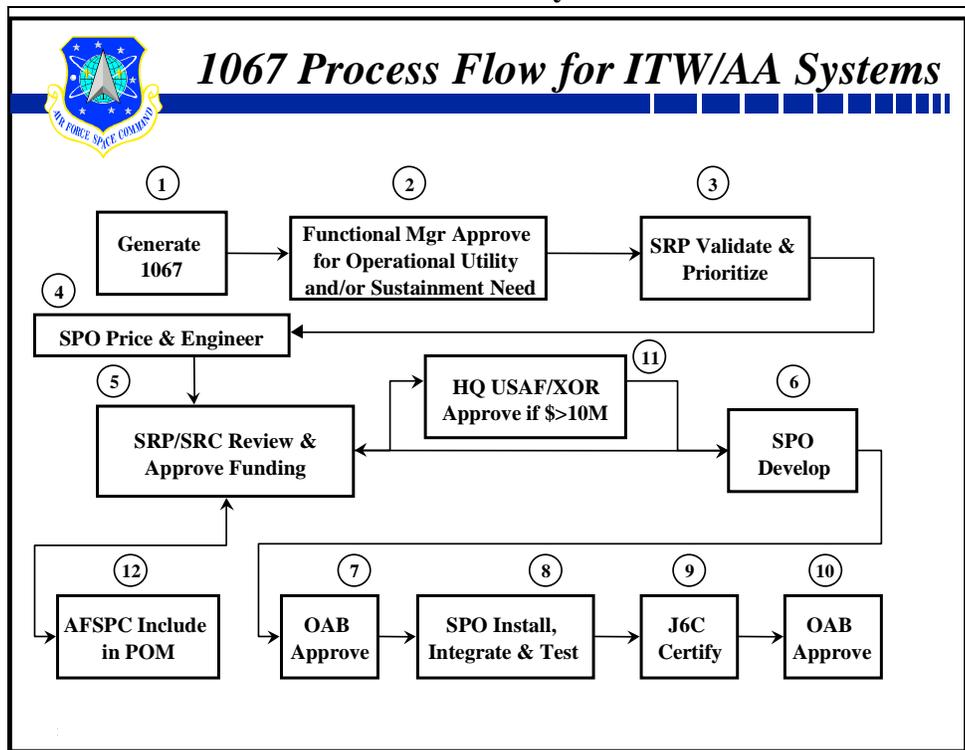
4.4.2. Software. Proposed software changes are documented using the SCF. This form is forwarded to the CMOC or other OAP for initial review and approval. The SPO assigns a UCN to each SCF. The complete package is then processed IAW NUI10-21.

**4.5. CMC, AMWC and Forward User’s ITW/AA Mission Systems Approval Boards:**

4.5.1. Hardware. The HQ AFSPC/DRC chaired SRP is the staff-level board that determines the priority of all proposed hardware modifications and/or upgrades. Each SRP representative champions those hardware modifications they feel are needed. This multi-command board then matches requirements with available funding. The output is a community-wide, agreed to spend plan that is presented to the SRC for consideration. SRC approval results in program direction to the change manager to execute the approved modification(s).

4.5.2. Software. Software version release changes are approved by the OAB. This multi-command board is briefed by the SPO Version Release Manager (VRM) who proposes specific software changes to be included in each version release. OAB approval results in program direction to the SPO to proceed or revise the version release content. Once the version release content is determined, the SPO VRM executes the program.

**Figure 4.1. AF Form 1067 Process Flow for CMOC Systems.**



**NOTES:**

1. Developer or user generates AF Form 1067. User signs as a valid need.
2. The SP/J33 Functional Manager approves proposed mods received from the CMOC OAP (or other subordinate OAPs) that are judged to have sufficient operational utility or sustainment need to warrant engineering and pricing.
3. System Requirements Panel validates and prioritizes mod.
4. SPO and/or contractor develops preliminary engineering solution and cost estimate.
5. System Requirements Council/Panel identifies funds and approves mod for implementation. SRC may elevate issues through the OAB to the MOB for review.
6. SPO develops modification and associated support and implementation planning. If mod cost estimate increases beyond SRC approved amount, SPO returns to SRC to revalidate need and obtain additional funds.
7. OAB approves mod for installation in the operational environment.
8. SPO installs, integrates and tests. 17th Test Squadron operational testing is accomplished also, either for the individual mod or as part of a larger increment.
9. USSPACECOM/J6C certifies.
10. OAB provides final operational approval. May elect to elevate to MOB.
11. HQ USAF/XOR reviews and approves mods if total cost exceeds \$10 million.
12. HQ AFSPC/XP includes in AFSPC POM if funds not available. Returns to SRC for action based on projection for funds availability.

## Chapter 5

### ICBM REAL PROPERTY/REAL PROPERTY INSTALLED EQUIPMENT (RP/RPIE) SYSTEMS AND FACILITIES

**5.1. Scope.** Improvements in technology frequently justify modifications to upgrade equipment and facilities. The purpose of configuration control is for control of facility configuration to ensure system operation, security, safety and survivability are met. Proposed modifications to ICBM RP/RPIE are subject to AFSPC CEF, Civil Engineer Flight, approval/disapproval. The MFAP process flow diagram is provided in [Figure 5.1](#).

#### **5.2. Systems Covered:**

5.2.1. Real Property (RP) is defined as: lands, buildings, structures, utilities systems, improvements and appurtenances thereto. Includes equipment attached to and made part of buildings and structures (such as heating systems), but not movable equipment (such as plant equipment).

5.2.2. Real Property Installed Equipment (RPIE) is defined as: Those items of government-owned or leased accessory equipment, apparatus and fixtures that are essential to the function of the real property and are permanently attached to, integrated into or on government-owned or leased property. Excluded is organization or collateral equipment reflected in the equipment authorization inventory data, as shown in AFM 67-1, volume IV. Also excluded are other technical, medical, commissary, aircraft installed, fixed laundry and dry cleaning, Military Auxiliary Radio System, cryptographic, automatic data processing, rental equipment, research and development and communications equipment.

5.2.3. Systems that fall within MFAP are Water and Waste Water, Heating, Ventilation and Air Conditioning, Grounding, Power Generation, Power Distribution and Monitoring Systems classified RP/RPIE and associated with the ICBM Weapon Systems.

5.2.4. Support items to be replaced that were approved by the MFAP in the past will require an AF Form 1067, but may not require the MFAP step of the approval process. All recommended changes of support items shall be coordinated with Missile Engineering. Examples of these items are: micro-waves, refrigerators, televisions, etc.

#### **5.3. Background:**

5.3.1. MFAP was established to provide an avenue for upgrading/modifying existing RP/RPIE at ICBM Weapon System sites. Funding for upgrades/modifications to RP/RPIE at ICBM sites is provided from varying sources. The specific upgrade/modification will aid in determining the funding source; however, most funding is provided from either the Unit CE or HQ AFSPC/CE. While day-to-day management of ICBM RP/RPIE systems is the responsibility of the Base Civil Engineer, all upgrades/modifications will be coordinated with AFSPC CEF and the ICBM Weapon System SPO or their designated representative.

5.3.2. MFAPs are convened as required.

#### **5.4. MFAP Responsibilities:**

5.4.1. The MFAP is responsible for approving/disapproving recommended modifications RP/RPIE systems supporting the ICBM weapon system. Configuration control of critical space launch RP/RPIE systems, through AFSPC CEF, is the responsibility of the owning unit. Notify AFSPC CEF to facilitate required civil engineering manuals changes IAW AFSPCI32-1005.

5.4.2. Panel Composition:

5.4.2.1. AFSPC CEF or designated alternate chairs the MFAP.

5.4.2.2. The HQ AFSPC/LGM, Maintenance Division, HQ AFSPC/SEW, Weapons Safety Division and HQ AFSPC/DRM, Directorate of ICBM Requirements or alternates must be present at each panel meeting.

5.4.2.3. The following agencies will have a representative present if modifications affecting their areas of expertise are being discussed:

5.4.2.4. ICBM Operations Branch (HQ AFSPC/DOMO).

5.4.2.5. Force Applications Branch (HQ AFSPC/SCMM).

5.4.2.6. Professional Services, BioEnvironmental Engineer Branch (HQ AFSPC/SGPB).

5.4.2.7. Readiness and Inspection Division (HQ AFSPC/IGI).

5.4.2.8. Security Forces Operations Division (HQ AFSPC/SFO).

5.4.2.9. Force Application Division (HQ AFSPC/DOM).

5.4.2.10. Maintenance Division (20 AF/LGM).

5.4.3. Review MFAP agenda package.

5.4.4. Provide single point coordination for their staff agency on emergency items which cannot await a formal panel action.

5.4.5. Ensure all proposals submitted satisfy at least one of the following criteria:

5.4.5.1. Affects Emergency War Order status.

5.4.5.2. Alleviate an operational/maintenance problem.

5.4.5.3. Eliminates safety or security deficiencies.

5.4.6. Assign the Master Change Log (MCL) class and maintenance priority (see [Table 5.1.](#)) in accordance with the following:

**Table 5.1. Maintenance Priority Table.**

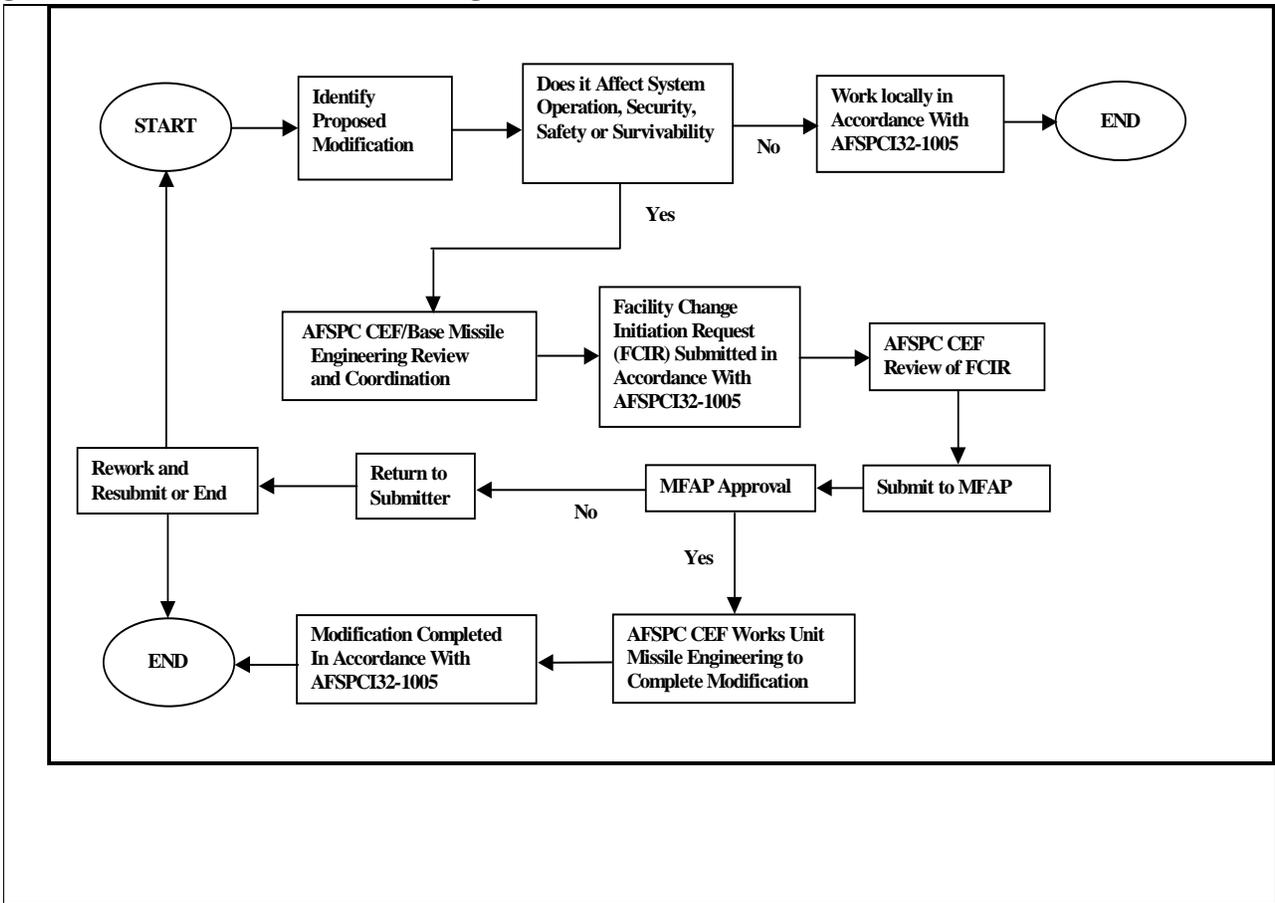
IMPACT	MCL CLASS	BASE CIVIL ENGINEERING (BCE) MAINTENANCE PRIORITY
Situation or deficiency that directly affects alert status of a missile or where a hazard exists that seriously endangers life or property	Immediate	1, 2 or 3

Situation or deficiency directly Compromises security or is a potential hazard to life or property.	Urgent	4, 5
Maintenance improvement (improved operation, reliability, maintainability or service life).	Routine	6

### 5.5. Wing Responsibilities:

- 5.5.1. Ensure AFSPC RP/RPIE managed/owned systems are not modified without proper approval.
- 5.5.2. Missile Engineering shall ensure proposed modifications requiring MFAP approval are submitted to AFSPC CEF. Approved modifications will be issued, by AFSPC CEF, as either Prototype MCLs, Civil Engineering Manual (CEM) MCLs or Record CEM MCLs.
- 5.5.3. Provide a representative, if desired, to HQ AFSPC MFAP meeting to advocate proposed modifications.
- 5.5.4. Ensure all proposed ICBM RP/RPIE modifications are reviewed by Missile Engineering prior to submission to AFSPC CEF.
- 5.5.5. Missile Engineering shall submit CEM changes and revisions to as-built drawings to AFSPC CEF in accordance with AFSPCI32-1005.

Figure 5.1. MFAP Process Flow Diagram.



## Chapter 6

### SPACELIFT RANGE SYSTEMS

**6.1. Scope.** The Spacelift Range RVB processes hardware, firmware and software modification requirements for Spacelift Range Communications-Electronics systems. This RVB is chaired by HQ AFSPC/DRS, Space Support Division. Members are HQ AFSPC/DRS/DOS/LGX/SCM and CVZ. Other members may be added as deemed necessary or appropriate. The Spacelift Range RVB ensures system changes that impact multiple wings, other services or government agencies, or foreign countries are adequately addressed by involved organizations. The Spacelift Range RVB provides headquarters oversight and advocacy for all modifications to the Spacelift Range System that cost more than \$500K. (See [Table 6.1.](#) and [Figure 6.1.](#)).

**6.2. Spacelift Range Systems.** This RVB addresses modifications to the Spacelift Range command and control, instrumentation and communications equipment and software.

**6.3. Background.** The Spacelift Range is required to support sub-orbital launches, launch of vehicles into orbit and interplanetary space; manned reusable vehicles, test and evaluation of ballistic missiles, guided weapons and aeronautical programs; space surveillance; and international launch activities (on request). The range provides this essential support to Department of Defense, national security, civil and commercial operators. Required capabilities include:

6.3.1. Protect people, property and the environment against the hazards associated with conducting spacelift and test and evaluation operations.

6.3.2. Collect, transmit, process and distribute data (time space position, imagery, telemetry, meteorology and metric information) required to ensure safe operations; achieve customer specified operational and test and evaluation objectives; maintain positive control over test and operational assets; assess environmental impacts of operations; and sustain command and control over system activities during all phases of operations.

6.3.3. Provide communications to and from all system facilities or sites. Provide communications interconnect to and from other National Ranges, the National Aeronautics and Space Administration, Federal Aviation Administration, National Weather Service, Consolidated Space Operations Center, Space Surveillance Network, North American Aerospace Defense, Advanced Range Instrumentation Aircraft and Aircraft Control as well as any other organization or facility interfacing with or providing support to spacelift and test and evaluation operations.

#### **6.4. HQ Spacelift Range RVB Responsibilities :**

6.4.1. Operate HQ AFSPC/DRS process in accordance with local procedures to validate proposed changes and approve modifications not requiring higher approval. Forward proposed changes that are above the HQ Spacelift Range RVB's threshold for approval to the appropriate higher approval board (e.g., MRB, RRC, etc.).

6.4.1.1. Collect AF Form 1067 or equivalent information from spacelift wings.

6.4.1.2. Provide AFSPC validation and request further technical analysis, if required. With Wing coordination, finalize priority and rank for implementation. Disposition disapproved modifications with rationale through the responsible Wing to the originator.

6.4.1.3. Submit the validated modification request to the SPO for further engineering analysis, if required, and notify the responsible Wing of the action.

6.4.1.4. If the modification costs less than \$10M, and with concurrence of the Wing, approve the solution, identify the funding source and specify the implementing agency.

6.4.1.5. Per AFI10-601, paragraph 5.5 and Table 6, if the modification costs more than \$10M, attach a RCM and forward to AF/XOR for approval.

6.4.1.6. If the modification costs more than \$65M, submit the modification documentation to HQ AFSPC/DRS for Mission Need Statement generation and entry into the requirements generation system as outlined in AFSPCHOI10-1.

6.4.2. Approve turnover to operations IAW defined turnover procedures.

6.4.3. It is the responsibility of HQ AFSPC to inform the responsible Wing of actions it, or a higher headquarters, has approved that would affect Wing operations, maintenance or control.

## 6.5. Wing Responsibilities :

6.5.1. Ensure AFSPC-managed/owned systems are not modified without proper approval

6.5.2. Operate wing level process IAW local procedures to provide proposed modifications to the Spacelift Range RVB and approval for modifications not requiring RVB approval.

6.5.2.1. Collect AF Form 1067 or equivalent information from Spacelift Range operators, customers, maintainers, sustainers or higher headquarters.

6.5.2.2. Provide initial validation to proceed to technical analysis. Assign mission priority. Return disapproved modifications with rationale to the originator.

6.5.2.3. Perform a technical analysis of a new or revised modification request to determine operational workarounds or potential Level 1 (software) or organizational level (hardware) solutions to the identified problem.

6.5.2.4. Submit the validated modification request to the SPO for engineering analysis.

6.5.2.5. If the modification meets the criteria in [Table 6.1.](#), approve the SPO's solution, identify the funding source and the implementing agency. Provide an informational copy of the appropriate documentation to the HQ Spacelift Range RVB.

6.5.2.6. If the modification does not meet the Table 6.1 criteria, submit modification to the HQ Spacelift Range RVB for action.

6.5.3. Provide a representative, if desired, to HQ AFSPC RVB meetings to advocate proposed modifications.

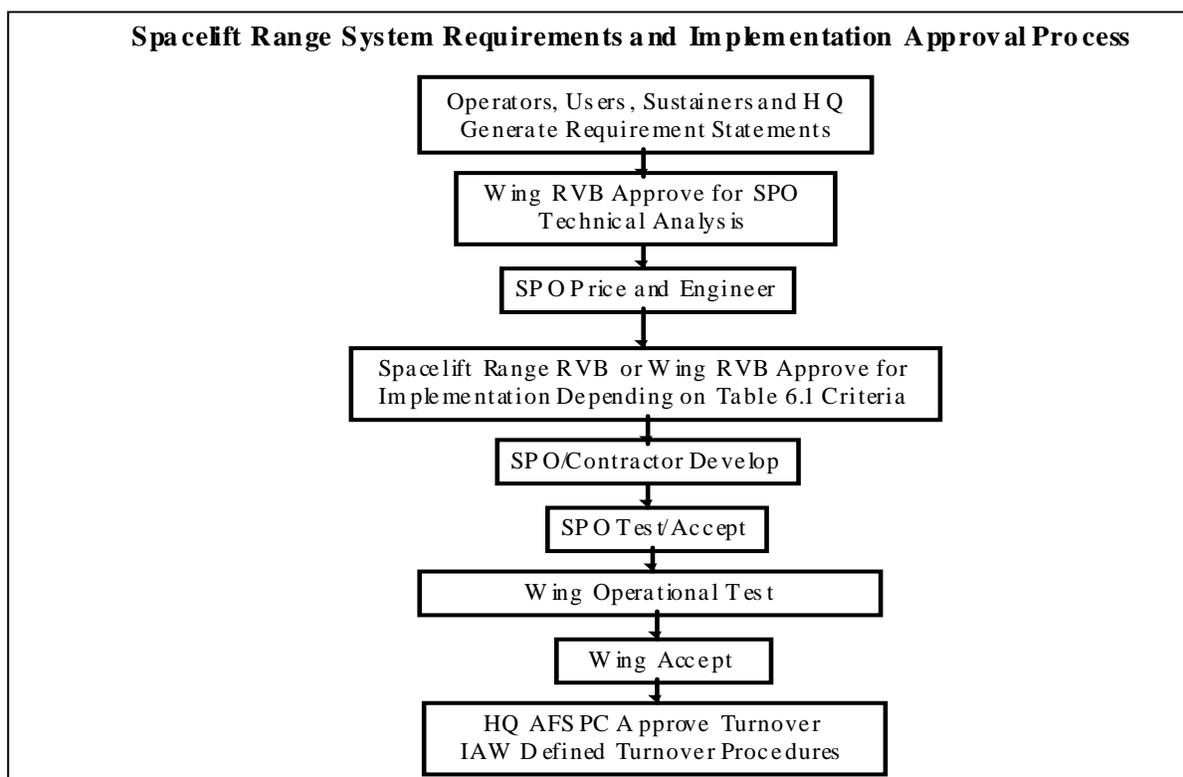
6.5.4. Operationally accept resulting modification IAW defined turnover procedures.

6.5.5. Wing has the authority to impact the priority ranking to support a launch mission.

**Table 6.1. HQ and Wing Spacelift Range RVB Approval Levels.**

<b>MODIFICATION PROPOSAL CRITERIA</b>	<b>HQ RVB</b>	<b>WING RVB</b>
Total costs less or equal to \$500K	Information Copy	Approval Required
Total costs exceeds \$500K	Approval Required	Initial Validation
Changes product level system specification	Approval Required	Initial Validation
Does not directly contribute to standardization of launch range systems	Approval Required	Initial Validation

**Figure 6.1. Requirements and Implementation Approval Process for Spacelift Range Systems.**



## Chapter 7

### SATELLITE CONTROL SYSTEMS

**7.1. Scope.** The Satellite Control RVB processes Satellite Control systems' hardware, firmware and software modification requirements. This RVB is chaired by HQ AFSPC/DR-appointed representatives. Members are from HQ AFSPC/DR/DO/LG/SC and CVZ organizations. Other members may be added as deemed necessary or appropriate. The Satellite Control RVB ensures proposed changes to operational systems that support AFSPC operations or operations of other services, government agencies, or foreign countries are adequately addressed by involved organizations. The Satellite Control RVB provides headquarters oversight and advocacy for all proposed changes to AFSPC-managed satellite control ground systems that exceed the wings' approval threshold (see [Table 7.1.](#) and [Figure 7.1.](#)).

**7.2. Satellite Control Systems.** This RVB addresses proposed changes to AFSPC maintained ground systems including the Air Force Satellite Control Network (AFSCN) Common User Element (CUE) infrastructure systems used to support all AFSCN users and the AFSCN mission unique systems and dedicated resources used to support specific space vehicles assigned to the AFSCN for command and control (e.g., DMSP, DSP, GPS, MILSATCOM, etc.).

**7.3. Background.** Satellite Control ground systems operated by AFSPC consist of CUE, Mission Unique Elements and dedicated resources (e.g., GPS, Milstar and DSP ground stations). The primary mission of the AFSCN is to command and control Department of Defense space vehicles and to distribute space system information in support of Unified and Specific Commander-in-Chief's warfighting requirements. Its secondary mission is to support; National missions; RDT&E programs; National Aeronautics and Space Administration spacecraft; as well as, other US Government agencies, allied nations, civil and commercial space missions.

7.3.1. The AFSCN is the primary Department of Defense (DoD) command, control and communications support capability providing satellite control services for assigned space systems. Satellite control ground systems support launch of space vehicles into orbit, early orbit checkout activities, on-orbit payload and platform bus operations, anomaly resolution and end-of-life actions by providing satellite Telemetry, Tracking and Commanding, mission data dissemination, and data processing support to meet DoD and national security objectives. The AFSCN is a dynamic network, which must respond to the needs of its various users in a timely fashion. It supports operations across the full spectrum of conflict, from peacetime through post-conflict administration.

7.3.2. The Defense Meteorological Satellite Program (DMSP) has been collecting weather data for U.S. military operations for more than two decades. Two operational DMSP Block 5D-2 satellites are in polar orbits, at about 458 nautical miles (nominal) at all times. The primary weather sensor on DMSP is the Operational Linescan System which provides continuous visual and infrared imagery of cloud cover over a swath 1,600 nautical miles wide. Additional satellite sensors measure atmospheric vertical profiles of moisture and temperature. Military weather forecasters use this data to monitor and predict regional and global weather patterns, including the presence of severe thunderstorms, hurricanes and typhoons.

7.3.2.1. On 29 May 98, AFSPC transferred satellite control authority over to the National Oceanic and Atmospheric Administration (NOAA) in response to a May 1994 Presidential Directive to merge civil and military polar-orbiting weather satellite programs. Although NOAA now operates

the DMSP constellation, the satellites belong to DoD and they, along with the DMSP C2 segment, are funded through AFSPC.

7.3.3. Defense Support Program (DSP) satellites use an infrared sensor to detect heat from missile and booster plumes against the earth's background. In 1995, a new means of processing DSP data, Attack and Launch Early Reporting to Theater, was brought on line. This capability provides improved warning of attack by short-range missiles against U.S. and Allied forces overseas.

7.3.3.1. The Air Force Space Command-operated DSP satellites are a key part of North America's early warning systems. In their 22,300-mile geosynchronous orbits, DSP satellites help protect the United States and its allies by detecting missile launches, space launches and nuclear detonations.

7.3.3.2. Numerous improvement projects have enabled DSP to provide accurate, reliable data in the face of evolving missile threats. On-station sensor reliability has provided uninterrupted service well past their design lifetime. Recent technological improvements in sensor design include above-the-horizon capability for full hemispheric coverage and improved resolution. Increased on-board signal-processing capability improves clutter rejection. Enhanced reliability and survivability improvements were also incorporated. In the 21st century, the SBIRS constellation is planned to replace DSP.

7.3.4. The Global Positioning System (GPS) is a dual-use (military and civil) space-based radionavigation system operated by the DoD and managed by the Interagency GPS Executive Board. The primary mission of GPS is to provide precise, all-weather, 3-dimensional position, velocity and time information to an unlimited number of properly equipped military and civil users in the air and space as well as on the land and sea. GPS information is real-time, passive and referenced to a common grid position. The GPS constellation also provides a precise time standard. Time transfer provides users a time standard within 20 nanoseconds of Coordinated Universal Time, as maintained by the United States Naval Observatory. A companion payload on the GPS satellites, the NUDET Detection System provides national warning of a nuclear detonation. Its role is to gather event data and determine the location and characteristics of the NUDET.

7.3.4.1. GPS supports military forces in the conduct of wartime operations. In addition, GPS supports many peacetime operations and aids a wide variety of platforms to conform to applicable national and international navigation rules. For military operations, GPS supports applications such as enroute navigation, low level navigation, target acquisition, close air support, missile guidance, command and control, all-weather air drop, sensor emplacement, precision survey, instrument approach, rendezvous, coordinate bombing, unmanned aerial vehicle operations, search and rescue, reconnaissance, range instrumentation and mine emplacement. Civil applications include intercontinental en route navigation, vehicle monitoring, oceanic and coastal navigation, harbor operations, resource exploration, hydrographic and geophysical surveying, position reporting and the monitoring and coordination of search operations.

7.3.4.2. Successful deployment of the GPS constellation allowed the DoD to declare system Full Operational Capability on 17 Jul 95.

7.3.5. Military Satellite Communications (MILSATCOM) satellites provide DoD and Allied forces with secure, dedicated, worldwide communications in support of their military missions. AFSPC has been assigned satellite control authority over platform bus operations on Defense Satellite Communications System (DSCS), Milstar, North Atlantic Treaty Organization (NATO) and Skynet satellites.

HQ AFSPC is responsible for the configuration control of changes to AFSPC's operational (see paragraph 1.1.1) MILSATCOM space, dedicated mission control and terminal segments of these satellite programs.

7.3.5.1. DSCS is an integral component of the global Defense Information Systems Network. It has been designed to provide command, control and communications service to the U.S. and Allied Forces by means of a SHF satellite network and a global network of fixed transportable and mobile ground antennas. DSCS provides a reliable, high-capacity, quality communications capability in support of military operations ranging from peacetime through contingencies that include war operations. Users include the National Command Authority, strategic and tactical forces and other selected U.S. Government agencies.

7.3.5.2. Milstar is a joint-service satellite communications system that provides secure, jam-resistant, worldwide communications to meet essential wartime requirements for high priority military users. This multi-satellite constellation links command authorities with a wide variety of resources, including ships, submarines, aircraft and ground stations.

7.3.5.3. The NATO III/IV satellites provide a telecommunication link at X-Band and UHF frequencies to NATO armed forces.

7.3.5.4. The Skynet 4 satellite program provides a telecommunication link at X-Band UHF frequencies to UK Ministry of Defence armed forces.

#### **7.4. Satellite Control RVB (AFSCN and Dedicated Ground System) Responsibilities:**

7.4.1. Operate HQ AFSPC/DR process in accordance with local procedures to validate proposed changes and approve modifications not requiring higher approval. Forward proposed changes that are above the Satellite Control RVB's threshold for approval to the appropriate higher approval board (e.g., MRB, RRC, etc.).

7.4.1.1. Collect AF Form 1067 or equivalent Change Request Form (CRF) information from the respective wing or equivalent unit. Distribute each proposed change affecting their satellite control ground system to the appropriate HQ AFSPC/DR organization (HQ AFSPC/DRN for GPS, HQ AFSPC/DRF for MILSATCOM and the AFSCN CUE, etc.).

7.4.1.2. The appropriate HQ AFSPC/DR RVB member will provide initial validation to proceed to further technical analysis and costing. Finalize priority and rank for implementation. Disposition each disapproved change request with rationale to the originator.

7.4.1.3. Submit each validated proposed change to the appropriate SPO for engineering analysis and a cost estimate.

7.4.1.4. Review the SPO's recommended implementation solution and cost estimate. If acceptable, process in accordance with AFI10-601 and paragraph 1.1.2.

7.4.1.4.1. If the modification costs less than \$10M, approve the SPO's solution and identify the funding source and the implementing agency.

7.4.1.4.2. If the modification costs more than \$10M, attach a RCM and forward to AF/XOR for approval.

7.4.1.4.3. If the modification costs more than \$65M, submit the modification documentation to HQ AFSPC/DR for entry into the Requirements Generation System as outlined in AFSPCHOI10-1.

7.4.2. Based on 17th Test Squadron operational testing, accept the resulting modification (> \$500K) IAW AFSPCI99-101.

**7.5. Wing Responsibilities :**

7.5.1. Ensure AFSPC managed/owned systems are not modified without proper approval.

7.5.2. Operate wing level process in accordance with local procedures to validate proposed changes and approve modifications not requiring Satellite Control RVB approval. Forward proposed changes that are above the wing’s threshold for approval to the HQ AFSPC Satellite Control RVB as described in Table 7.1.

7.5.2.1. Collect AF Form 1067 or equivalent CRF information from Satellite Control operators, customers, maintainers, sustainers or higher headquarters.

7.5.2.2. Provide initial validation to proceed to technical analysis. Assign mission priority. Return non-validated change requests with rationale to the originator.

7.5.2.2.1. Perform a technical analysis for each validated change request to determine operational workarounds or potential Level 1 (software) or organizational level (hardware) solutions to the identified problem.

7.5.2.2.2. Submit the same validated change request to the SPO for engineering technical analysis and cost estimate. Provide an informational copy to HQ AFSPC/DOR.

7.5.2.3. Review the SPO’s recommended implementation solution and cost estimate. If acceptable and the modification meets the wing approval criteria in Table 7.1., approve the change request for implementation and forward to the implementing agency. Provide an informational copy to the HQ AFSPC Satellite Control RVB.

7.5.2.4. If the modification does not meet the wing approval criteria, forward modification to the HQ AFSPC Satellite Control RVB for action.

7.5.3. Provide a representative, if desired, to the appropriate HQ AFSPC approval board as well as to the SPO CCB in order to advocate proposed modifications.

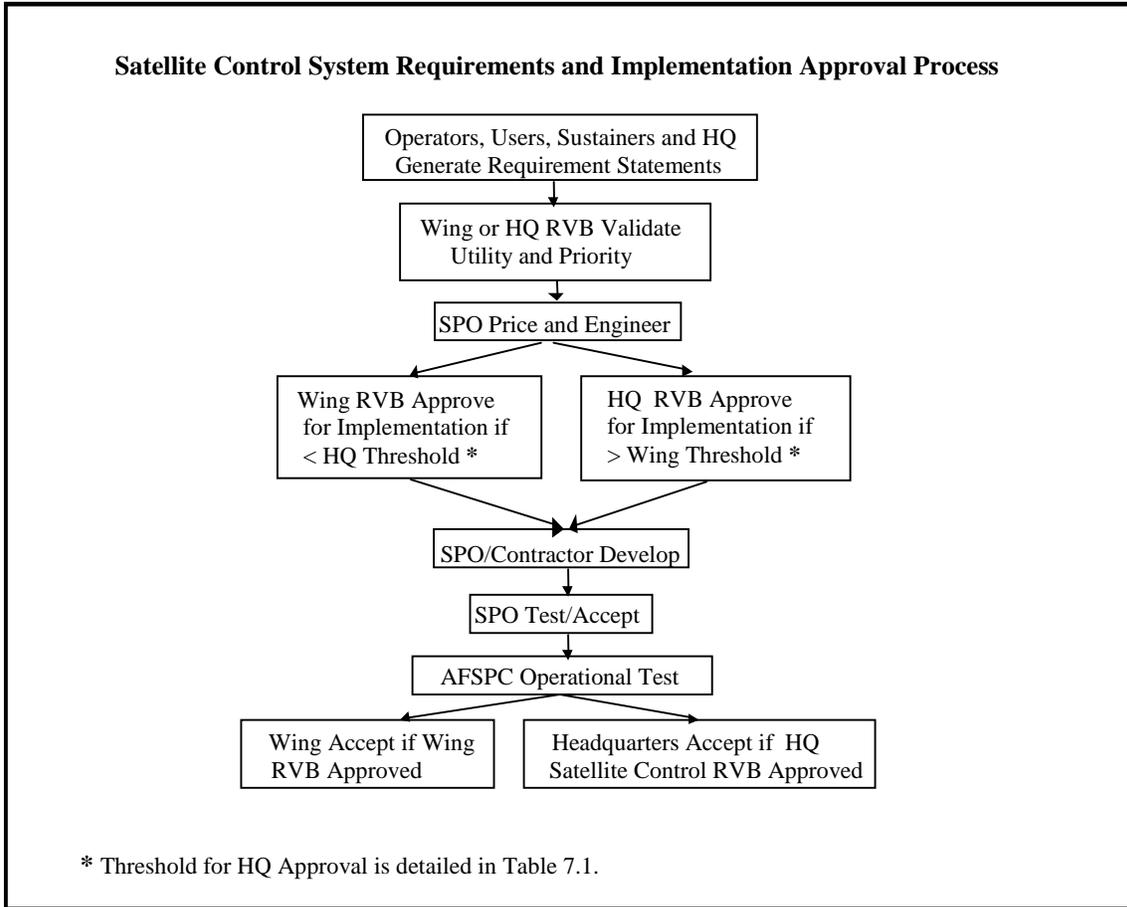
7.5.4. Operationally accept the resulting modification (< \$500K) IAW AFSPCI99-101.

**Table 7.1. HQ and Wing RVB Approval Levels.**

<b>MODIFICATION PROPOSAL CRITERIA</b>	<b>HQ RVB</b>	<b>WING RVB</b>
Total cost is less than \$500K	Information Copy	Approval Required
Modification corrects a Deficiency	Information Copy	Approval Required
Implementation via Level 1 Software Change or Organizational Maintenance	Information Copy	Approval Required (or delegated to subordinate unit)
Total cost exceeds \$500K	Approval Required	Initial Validation

New Mission, Major Enhancement or requires change in Organizational Support	Approval Required	Initial Validation
Involves a change to the ORD or Operations Concept	Approval Required	Initial Validation
Major Safety or Security Issue	Approval Required	Initial Validation

**Figure 7.1. Requirements and Implementation Approval Process for Satellite Control Systems.**



## Chapter 8

### **RAPID EXECUTION AND COMBAT TARGETING (REACT) HIGHER AUTHORITY COMMUNICATIONS/RAPID MESSAGE PROCESSING ELEMENT (HAC/RMPE) SYSTEMS**

**8.1. Scope.** This chapter covers operational and test HAC/RMPE software, the HAC/RMPE software portion of the Missile Procedures Trainer (MPT) and the Minuteman Enhanced Proficiency (MEP) trainer software and the HAC/RMPE Message Generator software. This chapter conforms to the Level 1 and Level 2 support tasks defined in the Software Normalization Memorandum of Agreement (MOA) (see details in [Attachment 2](#)).

8.1.1. Affected Units. AFSPC units affected by this agreement are HQ AFSPC, the 576th Flight Test Squadron (FLTS)-part of the Space Warfare Center, HQ 20th Air Force, 625th Missile Operations Flight (MOF) and the operational missile units. The Air Education and Training Command (AETC) unit affected by this agreement is the 392nd Training Squadron (TRS), part of the 381st Training Group (TRG). The AFMC unit affected by this agreement is the ICBM SPO, part of the Ogden Air Logistics Center (OO-ALC/LM).

**8.2. HAC/RMPE Documents.** A complete list of HAC/RMPE software documentation can be found at the OO-ALC Software Control Center. HAC/RMPE software documentation is maintained and distributed by OO-ALC/LMEZ. The documents listed below provide basic program and support guidance:

8.2.1. Operational Requirements Document. *SAC SORD 14-86-I/II Rapid Execution and Combat Targeting (REACT)*.

8.2.2. Program Management Directive (PMD). *PMD 2313(3)/11213F/11215F/64312F ICBM Integrated Weapon System Management (IWSM) - Appendix G, 26 Mar 97*.

**8.3. Background.** This instruction specifies responsibilities between Air Force Space Command, the 392 TRS, and the ICBM SPO for HAC/RMPE software support.

**8.4. Objectives. The objectives of this chapter are to:**

8.4.1. Define HAC/RMPE software support requirements.

8.4.2. Define the HAC/RMPE software support concept and high-level processes.

8.4.3. Identify roles, responsibilities and relationships of all organizations involved with providing and receiving HAC/RMPE software support.

**8.5. Administrative.** The Office of Primary Responsibility (OPR) for this chapter is HQ AFSPC/DOM. The AFMC point of contact is OO-ALC/LME. Recommended changes will be submitted to HQ AFSPC/DOM.

**8.6. System Operational Concepts and Requirements:**

8.6.1. Mission. The REACT program upgraded Minuteman III Launch Control Centers (LCCs) with Weapon System Control Consoles (WSCCs). The missions of the Minuteman weapon system and missile units have not changed. HAC/RMPE provides the message processing capability of the Weapon System Control Console (WSCC).

### 8.6.2. Operational Concept:

8.6.2.1. The WSCC is the primary duty station for the missile combat crew in the Minuteman LCC. Through the WSCC, the missile crew monitors and controls up to 50 remote missile sites in their squadron and responds to higher authority directions. The WSCC increases the speed and efficiency with which the missile crew handles all higher authority message traffic and improves ICBM responsiveness and pre-launch survivability.

8.6.2.2. The WSCC has two main parts: the Weapon System Control Element (WSCE) and the HAC/RMPE. The WSCE controls all weapon system related functions, processes National Command Authority derived data passed from the HAC/RMPE and performs remote rapid retargeting of Minuteman III ICBMs. HAC/RMPE integrates all higher authority communications received through the Strategic Automated Command and Control System (SACCS), the Air Force Satellite Communications system (AFSATCOM) and the Survivable Low Frequency Communications System in addition to performing automated rapid message processing, error correction, duplicate message suppression and alarm integration. The missile crew, interfacing with HAC/RMPE, completes message processing, corrects errors and determines message validity. HAC/RMPE will also integrate the Minuteman Minimum Essential Emergency Communications program when fielded. Execution values and related information are passed from the HAC/RMPE to the WSCE. The missile crew also uses HAC/RMPE to perform SACCS and AFSATCOM station-keeping functions.

8.6.2.3. The HAC/RMPE software is influenced by many factors. Changes to Single Integrated Operational Plan (SIOP) planning values and timing always require changes to the HAC/RMPE software. The SIOP normally undergoes scheduled changes, with set effective dates. Occasionally, the SIOP undergoes an emergency change which is effective immediately. HAC/RMPE software changes can also be driven by revisions to Chairman, Joint Chiefs of Staff (CJCS) and U.S. Strategic Command (USSTRATCOM) Emergency Action Procedures (EAPs), problems identified by system operators, Reserve Force Target List (RFTL) revisions, human-machine interface considerations and other factors.

8.6.2.4. The MPTs/MEPs are used to provide missile crew member training and evaluation. Ideally, crew members will be trained on all weapon system changes in the MPT/MEP prior to the change being implemented operationally. 20 AF/DO will determine if MPT/MEP training prior to alert duty is required based on the nature of any HAC/RMPE software changes. AFSPC requires that all MPTs/MEPs reflect full operational functionality.

8.6.2.5. AFMC will use a non-SIOP version of the HAC/RMPE software for day-to-day testing activities to minimize the exposure of SIOP information. Test beds will be upgraded temporarily to Top Secret-SIOP during testing and troubleshooting of operational software.

8.6.2.6. Missile crews will use manual backup procedures whenever the installed software version is not working correctly or is out-of-date, or whenever the system is down.

**8.7. HAC/RMPE Software Support Concept.** The ICBM SPO will implement changes to the HAC/RMPE software and manage its configuration IAW the ICBM IWSM PMD and the Software Normalization MOA.

**8.8. Operational System Parameters.** The mission requirements for REACT and HAC/RMPE are stated in the REACT SORD.

8.8.1. Availability. The REACT system shall have a minimum mission availability of 99.5 percent for a single LCC and 95 percent for a MPT/MEP. Other mission reliability and maintainability requirements may be found in the SORD, paragraph IV.A.1.d.

8.8.2. Timelines. System operation timeline requirements are classified and may be found in the REACT SORD, Section IV.A.

8.8.3. Security. The WSCC sustainment program will operate under the security requirements documented by the ICBM Security Classification Guide, the EAP-CJCS Classification Guide and all applicable AFSPC and USSTRATCOM security instructions. When HAC/RMPE hardware has training or test software installed, the facility and the personnel must be cleared for Top Secret. When actual SIOP data is loaded in HAC/RMPE equipment, the classification is TS-SIOP to ESI.

8.8.4. Interoperability. The HAC/RMPE software must fully integrate and operate with the WSCE, the MPT/MEP and current and future communications systems in the LCC.

**8.9. Database Support.** The HAC/RMPE software interfaces with a SIOP parameters database and a RFTL database. All changes to database information require a recompilation and redistribution of HAC/RMPE software and therefore are classed as Level 2 software support. USSTRATCOM J331/J521/J524 provides the necessary data elements for both SIOP parameters and RFTL databases.

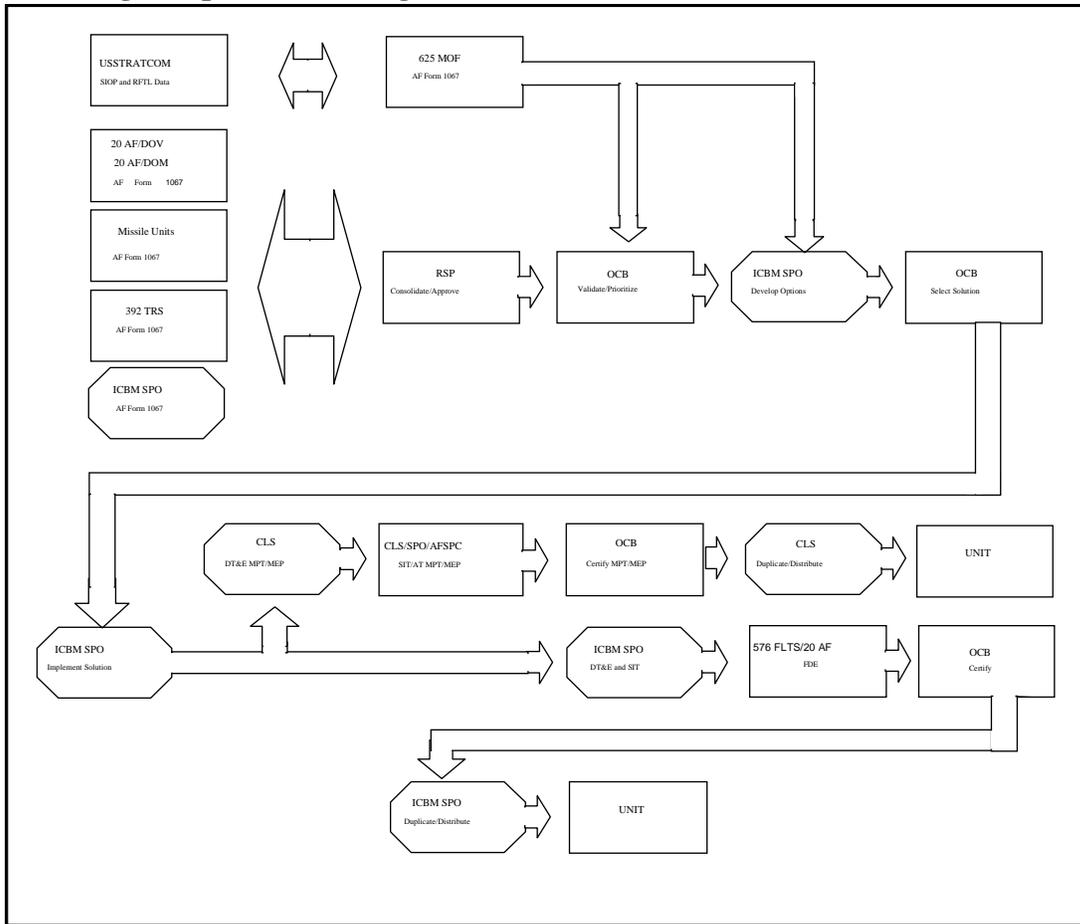
Operational Training. The OCB will determine when system operators and 576 FLTS personnel require training on changes to the HAC/RMPE software.

#### **8.10. Identify Anomalies, Improvements, Revisions:**

##### 8.10.1. Anomalies and Improvements:

8.10.1.1. Anyone associated with the system may report software anomalies or propose improvements to HAC/RMPE software using an AF Form 1067, also referred to as a change request in this chapter (see [Figure 8.1.](#)). AFSPC personnel, including system operators in the field, will report anomalies or suggest system improvements. ICBM SPO personnel and contractors will report anomalies or suggest improvements discovered during system testing or engineering analysis. The discovering organization will document the anomaly or suggested improvement on a change request, attach any information or associated data (printouts, logs, etc.) which may aid in problem analysis or replication, recommend a precedence (e.g., routine, urgent or emergency), and then submit the change request to the Requirements Screening Panel (RSP) (20 AF/DOV) IAW local procedures.

Figure 8.1. Change Request Flow Diagram.



ICBM SPO

OCB

576 FLTS/20 AF

ICBM SPO

USSTRATCOM

ICBM SPO

AF Form 1067

ICBM SPO

AF Form 1067

Missile Units

AF Form 1067

625 MOF

Form 1067

AF

OCB  
CLS/SPO/AFSPC  
CLS  
ICBM SPO  
OCB  
OCB  
CLS  
AF Form 1067  
392 TRS  
RSP  
SIOP and RFTL Data  
20 AF/DOV  
20 AF/DOM  
Consolidate/Approve  
Select Solution  
Develop Options  
Validate/Prioritize  
Duplicate/Distribute  
UNIT  
DT&E MPT/MEP  
SIT/AT MPT/MEP  
Certify MPT/MEP  
FDE  
Implement Solution  
DT&E and SIT  
Certify  
UNIT  
Duplicate/Distribute

**8.11. Software Support Process:**

8.11.1. The originating organization will submit emergency non-SIOP change requests to the RSP within 6 hours of problem identification.

8.11.2. SIOP and RFTL Revisions:

8.11.2.1. USSTRATCOM J331/J521/J524 are required to notify the Commander Task Force 214 (20 AF/CC), 20 AF/DO, and 625 MOF/TABM of all SIOP and targeting revisions.

625 MOF/TABM will notify and submit resulting change requests to the OCB so that the software change process is energized.

8.11.2.2. For emergency SIOP revisions, 625 MOF/TABM will immediately notify HQ AFSPC/DOM, 20 AF/DO, OO-ALC/LME, the HAC/RMPE Software Support Facility (HSSF) and OO-ALC/LMBT of the required revision and the effective date via telephone. During off-duty hours and holidays, 625 MOF/TABM may contact HQ AFSPC/DOM through the AFSPC Command Center, 20 AF/DO through the 20 AF Missile Operations Center (MOC), OO-ALC/LME and OO-ALC/LMBT through the OO-ALC/LM Alert Center and the HSSF through the USSTRATCOM Command Center. 625 MOF/TABM will submit an emergency change request to the OCB as soon as possible, but will not delay initial notification to do so.

8.11.2.3. 625 MOF/TABM will work with USSTRATCOM J331/J521/J524 to ensure HSSF personnel are kept abreast of new requirements as they develop and the scheduled effective date. 625 MOF/TABM personnel are collocated with USSTRATCOM and the HSSF and will ensure the HSSF receives all required materials from USSTRATCOM.

## **8.12. Validate, Prioritize And Forward Change Requests:**

### **8.12.1. Requirements Screening Panel:**

8.12.1.1. The RSP will consolidate, review, approve or disapprove, and set the precedence (e.g., routine, urgent or emergency) for all non-SIOP, non-RFTL change requests. The RSP will submit all approved change requests to the OCB. The RSP will submit an information copy of approved emergency change requests to OO-ALC/LME, OO-ALC/LMBT and the HSSF. The RSP will return all disapproved change requests to the originators with rationale for disapproval and send an information copy to OO-ALC/LME and the OCB.

8.12.1.2. In the event of an emergency non-SIOP change request, the 20 AF/DO may act on behalf of the RSP. 20 AF/DO or the RSP will immediately notify HQ AFSPC/DOM, OO-ALC/LME, the HSSF and OO-ALC/LMBT via telephone of the emergency change request and the effective date. During off-duty hours and holidays, 20 AF/DO may contact HQ AFSPC/DOM through the AFSPC Command Center, OO-ALC/LME and OO-ALC/LMBT through the OO-ALC/LM Alert Center and the HSSF through the USSTRATCOM Command Center. 20 AF/DO will submit emergency change requests to the RSP as soon as possible but will not delay initial notification to do so. Change requests acted on by 20 AF/DO will be reviewed at the next RSP meeting.

### **8.12.2. Operations Control Board:**

8.12.2.1. The OCB will serve as the official Level 1 single point of contact for taskings to the ICBM SPO.

8.12.2.2. The OCB will review change requests approved by the RSP. The OCB will determine the validity of change requests, prioritize them and forward them to OO-ALC/LME, OO-ALC/LMBT and the HSSF with an information copy sent to HQ SWC/XRT. The OCB will return invalid change requests to the originator through the RSP with rationale for the "invalid" determination and send an information copy to OO-ALC/LME. For urgent and Category II emergency changes, the OCB will negotiate with the ICBM SPO to determine when the software

release must be present in the field. For routine changes, the OCB will determine which valid change requests to include in the next scheduled change IAW the timelines in paragraph 8.31.

8.12.2.3. In the event of an emergency problem or revision, the AFSPC/DOM may act on behalf of the OCB. AFSPC/DOM or the OCB will transmit valid emergency change requests to the OO-ALC/LME, OO-ALC/LMBT and the HSSF as soon as possible, but within 6 hours of OCB validation. Change requests acted on by AFSPC/DOM will be reviewed at the next OCB meeting.

8.12.2.4. The following priority system will be used by the OCB when reviewing change requests:

8.12.2.4.1. Operational Software Priority Scale:

8.12.2.4.1.1. One (1) - A SIOP change or a change needed to return functionality to HAC/RMPE.

8.12.2.4.1.2. Two (2) - A change needed to correct a message processing deficiency, reception deficiency or a deficiency that partially affects system functionality with no workaround.

8.12.2.4.1.3. Three (3) - A change needed to correct a message processing deficiency, reception deficiency or a deficiency that partially affects system functionality but a workaround is in place.

8.12.2.4.1.4. Four (4) - A change that corrects a deficiency which has no effect on system functionality.

8.12.2.4.1.5. Five (5) - A change that is an improvement or enhancement to the system.

8.12.2.4.2. MPT/MEP Priority Scale:

8.12.2.4.2.1. One (1) - A SIOP change or a change needed to return functionality to MPT/MEP.

8.12.2.4.2.2. Two (2) - A change needed to correct a deficiency that affects training and has no workaround.

8.12.2.4.2.3. Three (3) - A change needed to correct a deficiency that affects training but a workaround is in place.

8.12.2.4.2.4. Four (4) - A change that corrects a deficiency which has minimal effect on training.

8.12.2.4.2.5. Five (5) - A change that has no training impact.

8.12.2.5. The OCB will maintain a master list of all validated operational and MPT/MEP change requests. This master list will be revised and distributed to concerned organizations at least semi-annually.

8.12.2.6. When required, an ICBM SPO representative will brief the OCB on the status of all development and problem resolution efforts and provide analysis using prescribed metrics. The OCB will notify the ICBM SPO at least 5 days in advance of when a briefing is required.

8.12.2.7. When required, the ICBM SPO will provide the OCB a written report on the current status of changes underway. This report will include cost, schedule and technical status of all change requests being addressed. The OCB will distribute the report to concerned organizations.

**8.13. Develop Solution:**

8.13.1. The ICBM SPO will examine each change request it receives and determine if it is Category I or II. For Category II change requests, the ICBM SPO will develop trade studies of proposed design solutions based on the OCB's priority list, firm effective dates and prudent application of resources.

8.13.2. Level 1 representatives may work with the ICBM SPO as advisors on technical issues and requirements interpretation. This will include participation in requirements, design and test readiness reviews for software development efforts. The ICBM SPO will notify the OCB of all ICBM SPO program reviews including requirements, design and test readiness reviews. Level 1 representatives will be members of the ICBM SPO CCB. If the Level 1 representatives disagree with CCB decisions, the matter will be brought before the OCB for resolution with the CCB.

8.13.3. The ICBM SPO trade studies will include cost estimates, schedules, impacts to other systems/subsystems, interface changes, documentation affected, impact to other work in progress, risks involved and estimated source lines of code impacted. Each proposed solution will be technically feasible for implementation.

8.13.4. All proposed schedules will comply with response times IAW the HAC/RMPE Concept of Software Support. When creating schedules, the HSSF will plan for each Level 1 support action to take the maximum allowable time.

8.13.5. Workarounds. In some emergency situations, it may be necessary for system operators to respond with temporary solutions to restore the system to operational status. The ICBM SPO will provide engineering assistance to restore operations on a case-by-case basis as requested by the OCB. 20 AF/DO is the approving authority for all ICBM SPO workaround procedures.

**8.14. Propose Solution:**

8.14.1. For each change request, the ICBM SPO will forward a written response to the OCB. The written response will contain the trade studies of alternate solutions and make recommendations on which solution is preferable. The ICBM SPO will recommend combining change requests where feasible.

8.14.2. For emergency change requests, the ICBM SPO will determine if the change request is Category I or II. For Category I emergency change requests, a design solution will be pursued immediately. For Category II emergency change requests, the ICBM SPO will respond to the OCB within 24 hours with an estimate of the scope of change required and a plan to develop and provide solutions. The initial response to the OCB may be over the telephone with a written report to follow. The OCB and the ICBM SPO will negotiate the "present in the field date" based on the initial response.

**8.15. Select Final Solution:**

8.15.1. The OCB will select a final solution based upon the ICBM SPO proposals and recommendations. The OCB will consider schedule, cost and risk factors when selecting a solution. The ICBM SPO will advise the OCB, address the technical aspects of each option and provide further information as requested. The OCB will notify the ICBM SPO of the selected solution and send a copy to HQ SWC/XRT.

8.15.1.1. For routine and urgent change requests to HAC/RMPE software, the OCB will be allowed 3 working days after receipt of the ICBM SPO proposed solutions to select the final solution.

8.15.1.2. For emergency change requests to HAC/RMPE software, the OCB will be allowed 6 hours after receipt of the ICBM SPO proposed solutions to select the final solution.

8.15.2. Following OCB selection of a final solution, the ICBM SPO will generate ECPs for each affected baseline. The ECPs will define the solution and include cost estimates, schedules, impacts to other systems, an assessment of risk, any affected engineering drawings and other technical data impacted. To minimize paperwork and speed analysis, related change requests and ECPs will be combined into a single change package to the maximum extent practical.

8.15.3. Each ECP will be submitted to the ICBM SPO CCB with an information copy sent to HQ SWC/XRT. The SPO CCB will evaluate proposed changes for documentation, interface and weapon system integration impacts. The CCB will approve or disapprove the ECP. The AFSPC member of the SPO CCB will report the CCB proceedings and outcomes to the OCB. The CCB Directive (CCBD) and board minutes will formally reflect the disposition of each ECP. The SPO CCB will send a copy of the CCB minutes to the OCB; disapproved ECPs with the rationale for disapproval will also be sent to the OCB for further review.

8.15.4. RFTL revisions happen 3 times per year, once in conjunction with the SIOP revision and twice separately. Since the separate RFTL revision is a simple Category I change to RFTL database values, it will not go through the ECP/CCB process.

8.15.5. The OCB will notify the ICBM SPO if 576 FLTS and 20 AF/DO must be included in the software change process to ensure that 576 FLTS and 20 AF/DO personnel are familiar with the software release and have proper knowledge for conducting Operational Test and Evaluation (OT&E).

8.15.6. The OCB will notify the ICBM SPO, 20 AF/DO, the 381 TRG and HQ SWC/XRT when a system demonstration for system operators is required. A system demonstration will take place during Development Test and Evaluation (DT&E) or OT&E and is intended to ensure system operators understand the nature of an upcoming change in order to properly train combat crews and unit personnel.

## **8.16. Design and Modify Software:**

8.16.1. Using the ECP, the HSSF will then implement the CCBD by formally designing the software change and performing the resulting source code modifications. SIOP and RFTL revisions will be incorporated into the appropriate database. The HSSF will design software changes using processes in compliance with Level 3 of the Software Engineering Institute's (SEI's) Capability Maturity Model (CMM), as a minimum.

8.16.2. Following modification, the HSSF will provide a SIOP training values database (received from 20 AF/DOME) along with the modified operational HAC/RMPE Message Processor software to the Contractor Logistical Support (CLS) contractor. These products become the basis for the MPT/MEP and test versions of the HAC/RMPE software. The CLS contractor will then integrate the changes and recompile the MPT Control Program. The CLS contractor will also integrate all changes into and recompile the MEP software. The CLS contractor will use an ICBM SPO provided VAX platform, engineering models and software tools for performing software integration and compilation activities. The VAX will be housed and maintained by the CLS contractor.

8.16.3. If HAC/RMPE firmware changes, the ICBM SPO will coordinate the change with the HQ AFSPC/DOM, 20 AF, and HQ SWC/XRT. On 1 Oct 98, OO-ALC became responsible for maintaining HAC/RMPE hardware and automatic test equipment software used to change HAC/RMPE firmware. The responsibility for maintaining HAC/RMPE operational hardware also transferred from Sacramento Air Logistics Center (SM-ALC) to the Tobyhanna Army Depot in FY99.

8.16.4. If a HAC/RMPE software change forces changes to the Message Generator software, the ICBM SPO must update the Message Generator software prior to the start of OT&E.

8.16.5. Technical Orders. Technical Order modifications due to HAC/RMPE software changes will be generated by the ICBM SPO and sent to 20 AF/DOVE as soon as possible for review and incorporation. 20 AF/DOVE will be responsible for reviewing all Technical Order modifications and submitting the necessary paperwork to the appropriate agencies for incorporation.

### **8.17. Certify Operational Capability:**

8.17.1. Software Version Document (SVD). For both operational software and MPT/MEP software, the ICBM SPO will produce and present SVDs to the OCB when the software is ready for certification. Each SVD will include the version nomenclature, summary of the change, risk assessment, Computer Memory Confidence Check values (operational software only) and effective date. The OCB will review and concur/non-concur with each SVD. After resolving any discrepancies, the final SVDs will be approved by the OCB.

8.17.2. OCB Certification. For operational software, the OCB will review the SVD as well as findings from the DT&E and FDE. For MPT/MEP software, the OCB will review the SVD and the findings from the combined System Integration Test/Acceptance Test (SIT/AT). If the HAC/RMPE software release meets requirements, the OCB will certify it and notify the ICBM SPO. Certification will be documented by a letter. If the HAC/RMPE software release does not meet requirements, the OCB will notify the ICBM SPO of discrepancies.

8.17.3. The OCB will be allowed 5 working days to certify routine and urgent changes to HAC/RMPE software after completion of all testing.

8.17.4. The OCB will be allowed 12 hours to certify emergency changes to HAC/RMPE software after completion of all testing.

### **8.18. Software Release:**

8.18.1. Time Compliance Technical Order (TCTO). The ICBM SPO will generate and distribute TCTOs as needed to notify units and direct installation of HAC/RMPE software/firmware changes.

8.18.2. Duplication.

8.18.2.1. The ICBM SPO will deliver to each affected missile unit and the 576 FLTS certified operational software release packages. The CLS will deliver to each affected missile unit and the 392 TRS certified MPT/MEP software release packages. Any changed HAC/RMPE firmware will be included as part of the certified operational software release packages. Each operational software release package shall contain a copy of the modified software and a copy of the SVD. Each MPT/MEP software release package shall contain a copy of the modified software and a copy of the SVD.

**8.19. Computer Security Accreditation:**

8.19.1. Security reaccreditation must be applied for and granted IAW appropriate security instructions and directives as a result of any developmental changes that affect the system security of the operational HAC/RMPE system, MPT/MEP systems, the HSSF, the Vandenberg AFB test sites, the ICBM SPO Strategic Missile Integration Center (SMIC) and General Dynamics' HAC/RMPE Integrated Test Facility (ITF). At a minimum, security reaccreditation will be applied for and granted every 3 years.

8.19.2. Accreditation roles and responsibilities (see Figure 8.2.) are detailed in the Sustainment Security Certification and Accreditation Plan.

**Table 8.1. Accreditation Responsibility.**

<b>System</b>	<b>Developmental Accreditation OPR</b>	<b>Designated Approval Authority</b>
Operational HAC/RMPE	OO-ALC/LME	HQ AFSPC/DSC & USSTRATCOM
MPT/MEP	OO-ALC/LMBT and Missile Units	Missile Unit Commanders
HSSF	Det 1, OO-ALC	AFMC & USSTRATCOM
SMIC	OO-ALC/LMET	AFMC & USSTRATCOM
Vandenberg Test Sites	HQ AFSPC/DOTO	HQ AFSPC/DSC & USSTRATCOM
General Dynamics ITF	General Dynamics	AFMC & USSTRATCOM

**8.20. Security Issues:**

8.20.1. The clearance level for individuals requiring access to the operational system and associated activities will be Top Secret with SIOP Categories 6 and 10. The clearance level for individuals requiring access to the MPT/MEP and associated operational areas will be Top Secret.

8.20.2. All information transfers between organizations will be kept to the lowest classification possible and transferred by a secure means commensurate with the document or media classification level. Modification proposals are to be discussed and recorded in general terms for informational and inter-organizational communications with the actual data delivered to the HSSF by 625 MOF/TABM.

**8.21. Level 1 and 2 Interface.** The interface between Level 1 and Level 2 personnel is defined as “inter-active on a daily basis.” Personnel assigned to the HSSF will work directly with the 625 MOF/TABM to ensure a thorough understanding of requirements and timely production of the HAC/RMPE software. ICBM SPO personnel will work directly with AFSPC test teams to help prepare for OT&E and SIT/AT.

**8.22. Special Studies and Projects.** The OCB may task the ICBM SPO to accomplish special studies and projects. The OCB will task the ICBM SPO in writing, include a priority and suggest a completion time. When tasked, the ICBM SPO will prepare and submit to the OCB cost estimates, a schedule and an

assessment of the impact to other projects. If a study or project underway will adversely impact any other software effort, the SPO will promptly notify the OCB.

**8.23. Use of Operational Systems.** Software support, development and testing will be accomplished by the ICBM SPO on separate development systems, not on operational systems.

**8.24. Software Process.** The ICBM SPO will use quality software processes in the development and modification of HAC/RMPE software.

8.24.1. Government Provided Support. The ICBM SPO shall ensure the software process enacted for the HAC/RMPE program is predictable, repeatable and manageable in terms of quality, cost, schedule and performance. For government provided software support, the ICBM SPO must ensure the software process implemented complies with at least Level 3 of the SEI's CMM.

8.24.2. Contractor Provided Support. The ICBM SPO shall ensure, at a minimum, the Request for Proposal for future contracted software support includes the requirement for a defined software process plan that includes provisions for optimizing the software process. The ICBM SPO shall assemble a team capable of performing a Software Capability Evaluation (SCE). SCE is described in Electronic Systems Division's Technical Report CMU/SEI-87-186, A Method for Assessing the Software Engineering Capability of Contractors.

**8.25. AFSPC Level 1 Software Support And Organizational Framework:**

8.25.1. This section defines the various organizations and their role in providing Level 1 support for the HAC/RMPE software. The Software Normalization MOA details and provides the authority for Level 1 support.

8.25.1.1. HQ AFSPC:

8.25.1.1.1. HQ AFSPC/DOM will administer the OCB.

8.25.1.1.2. HQ AFSPC/DOM (or a designated representative) will chair the OCB. The OCB will convene when called by the chair. Membership will normally include HQ AFSPC/DOM/SCM, USSTRATCOM/J331, 20 AF/DO, HQ SWC/XRT and 392 TRS representatives. The ICBM SPO will have a liaison to the board.

8.25.1.1.3. The OCB will determine when USSTRATCOM/J331, HQ SWC/XRT and the 20 AF/DO need to be included in the Level 2 change process as well as when a system demonstration is required from the HSSF.

8.25.1.1.4. The OCB will appoint an executive secretary who will notify the ICBM SPO of emergency, urgent and routine changes; establish a process to collect and track cost and schedule data; notify the membership of all OCB meetings; write and distribute OCB minutes to the RSP, all missile units, HQ SWC/XRT, the 392 TRS and the ICBM SPO; distribute CCB reports which concern HAC/RMPE; work with the ICBM SPO and 20 AF to ensure workarounds are created when necessary; and ensure the AFSPC Command Center has a current OCB roster and notification checklist for emergencies.

8.25.1.1.5. HQ AFSPC/DOM will provide Level 1 representation to the ICBM SPO as described in the preceding paragraphs. HQ AFSPC/DOM will participate in the ICBM SPO CCB.

## 8.25.1.2. 20 AF:

8.25.1.2.1. The 20 AF/DO will oversee day-to-day performance of the weapon system.

8.25.1.2.2. The 20 AF/DO will coordinate on the OT&E and SIT/AT test plans and support those tests IAW the test plans.

8.25.1.2.3. The 20 AF/DO will create the RSP and provide administrative support.

8.25.1.2.4. The 20 AF/DO (or a designated representative) will chair the RSP. The RSP will convene when called by the chair. Membership will include representatives from 20 AF/DOM and DOV. The ICBM SPO will be notified of all RSP meetings and may have an advisor present whenever the panel meets.

8.25.1.2.5. The RSP will determine if MPT/MEP training on a new software release is required prior to performing alert duty in the LCC.

8.25.1.2.6. The RSP will appoint an executive secretary who will notify HQ AFSPC/DOM, the ICBM SPO and the HSSF of emergency and urgent changes; establish a process to collect and track, analyze and report metric data; notify the membership of all RSP meetings; write and distribute minutes to the OCB, missile units, HQ SWC/XRT, the 392 TRS and the ICBM SPO; provide information copies of change requests and approved solutions to SWC/XRT and the 392 TRS; ensure workarounds are implemented as necessary; and ensure the 20 AF MOC has a current RSP roster and notification checklist for emergencies.

8.25.1.2.7. 20 AF/DOME will ensure the HSSF receives the non-SIOP training values necessary to create the MPT/MEP and test software versions.

8.25.1.2.8. 625 MOF/TABM will work directly with the HSSF to identify functional requirements and will ensure that the HSSF receives all necessary documents and data from USSTRATCOM. The HSSF will specify what documents and information are needed. 625 MOF/TABM will also provide the HSSF with coded Bulk Storage/Loaders as required to facilitate software testing. 625 MOF/TABM personnel shall be on call and can be contacted through the USSTRATCOM Command Center. 625 MOF/TABM will ensure that USSTRATCOM has a current roster and notification checklist for emergencies.

## 8.25.1.3. Missile Units:

8.25.1.3.1. Each missile unit will identify a single point of contact for all HAC/RMPE software support matters. Each missile unit will establish procedures to do the following:

8.25.1.3.1.1. Consolidate and send change requests to the RSP.

8.25.1.3.1.2. Meet ICBM SPO couriers at designated locations and receive software releases.

8.25.1.3.1.3. Control, distribute and install HAC/RMPE software releases.

8.25.1.3.1.4. Control and destroy operational HAC/RMPE software disks and MPT/MEP TK-70 HAC/RMPE tapes from previous releases IAW guidance contained in the HQ AFSPC/DOM software certification letter.

8.25.1.3.1.5. Track and upchannel critical software failures and Mean Time To Repair (MTTR).

8.25.1.3.2. Missile crew members will perform the Level 1 task "restore to operations" IAW applicable technical data in the LCC. MPT/MEP operators and CLS personnel will perform "restore to operations" functions for the MPT/MEP.

8.25.1.4. TRS (AETC):

8.25.1.4.1. The 381 TRG will establish a single point of contact for all HAC/RMPE software support matters. The 392 TRS will establish procedures to consolidate and send change requests to the RSP, support combined SIT/AT for MPT/MEP software changes and track and upchannel critical software failures and MTTR.

8.25.1.4.2. MPT/MEP operators and CLS personnel will perform "restore to operations" functions for the MPT/MEP.

8.25.1.4.3. The 381 TRG will provide informal, initial Emergency War Order (EWO) training to 576 FLTS personnel for each SIOP revision and recurring EWO training as necessary to keep the 576 FLTS test directors current. This training may be over-the-shoulder of regularly scheduled EWO training for 392 TRS instructors. The 392 TRS will support training requests from the ICBM SPO. The ICBM SPO will request the necessary training to keep AFMC personnel current in HAC/RMPE and EWO procedures.

8.25.1.4.4. The 392 TRS will control and destroy previous release MPT/MEP TK-70 tapes IAW guidance contained in the HQ AFSPC/DOM software certification letter.

8.25.1.5. 576 FLTS:

8.25.1.5.1. The 576 FLTS will establish a Test Manager as the single point of contact for all HAC/RMPE software support matters. The Test Manager will be the OPR for the OT&E plan. HQ SWC/XRT will be responsible and have direct communication with HQ AFSPC/DOM to ensure test objectives are met.

8.25.1.5.2. The 576 FLTS will establish procedures to consolidate and send change requests to the RSP through HQ SWC/XRT.

8.25.1.5.3. The 576 FLTS will control and destroy operational HAC/RMPE software disks from previous releases IAW guidance contained in the HQ AFSPC/DOM software certification letter.

## **8.26. ICBM SPO Level 2 Software Support and Organizational Framework:**

8.26.1. Level 2 support does not include major modifications to the HAC/RMPE. All weapon system modifications representing a major change in user requirements (e.g., addition of new communication systems, development of new CSCIs, etc.) will be the basis for a major modification program. Major modification programs represent a major weapon system or communications system modification and will require contractor support obtained through standard ICBM SPO acquisition procedures. These procedures include collecting change requirements, prioritizing the requirements and then implementing a change incorporating the highest priority requirements, as funding becomes available.

8.26.2. This section defines the various organizations and their role in providing Level 2 support for the HAC/RMPE software. The Software Normalization MOA details and provides the authority for Level 2 support.

8.26.2.1. ICBM SPO:

8.26.2.1.1. Availability. For emergency changes, the ICBM SPO will be available 24-hours-a-day, 7-days-a-week. The ICBM SPO will dedicate all available resources to analyze the requirements; develop technical solutions; and modify, test and deliver the software. These resources will include: 1) all military, civilian and contractor personnel assigned or under contract to the ICBM SPO and 2) the SMIC and the HSSF along with supporting equipment (regardless of other activities being supported). OO-ALC/LME may be contacted through the OO-ALC/LM Alert Center. The OO-ALC/LM Alert Center is available 24-hours-a-day, 7-days-a-week. OO-ALC/LME will ensure the OO-ALC/LM Alert Center has a current roster and notification checklist for emergencies. HSSF personnel on call will respond within 20 minutes to ICBM SPO management and AFSPC in support of emergency requests. The HSSF will ensure the USSTRATCOM Command Center has a current roster and notification checklist for emergencies. After notification, the HSSF will initiate a personnel recall and begin problem/change analysis activities within 60 minutes.

8.26.2.1.2. Configuration Management. The ICBM SPO will be solely responsible for managing the configuration of the HAC/RMPE software, REACT trainer hardware and software, the Message Generator software, the WSCE simulator, HAC/RMPE hardware and Automatic Test Equipment (ATE) software used for firmware changes and all associated documentation. The ICBM SPO CCB will direct all changes to these items except for Category I or II emergency changes. The HSSF will brief and receive the approval of the ICBM SPO Director to implement a Category I or II emergency change, and will then present the changes to the CCB at the earliest opportunity. A Level 1 representative will be invited to all CCB proceedings.

8.26.2.1.3. Interface Control. The ICBM SPO Interface Control Working Group (ICWG) will control all HAC/RMPE interfaces. Any interface changes will be coordinated, controlled and approved by the ICWG and the CCB.

8.26.2.1.4. OO-ALC/LMEZ (ICBM SPO System Software Branch):

8.26.2.1.4.1. LMEZ will be responsible for configuration management of all operational HAC/RMPE software documentation.

8.26.2.1.4.2. LMEZ will compile and present the ECP to the CCB.

8.26.2.1.4.3. LMEZ will help provide requirements and system analysis for change requests.

8.26.2.1.4.4. The RSP and OCB will send rejected change requests with the rejection rationale to OO-ALC/LME. OO-ALC/LME will monitor the proposed changes and investigate for latent defects that impact the weapon system.

8.26.2.1.4.5. LMEZ will contract appropriately to ensure uninterrupted support of the operational HAC/RMPE software.

8.26.2.1.4.6. LMEZ will notify the OCB of ICBM SPO-sponsored HAC/RMPE program reviews, technical interchange meetings and tests.

8.26.2.1.5. DET 1, OO-ALC:

8.26.2.1.5.1. Det 1 will be responsible for making all changes to the operational HAC/RMPE software. They will provide the OCB with trade studies and options for each valid change request.

- 8.26.2.1.5.2. Det 1 will maintain configuration of the operational software.
- 8.26.2.1.5.3. Det 1 will deliver the operational software products to affected units, 576 FLTS, CLS and all other appropriate development agencies.
- 8.26.2.1.5.4. Det 1 personnel will work with assigned AFSPC personnel, including 20 AF and 576 FLTS, on a continual basis to ensure requirements are adequately defined, properly implemented and thoroughly tested. This will allow ICBM SPO and Det 1 personnel advanced notification of upcoming requirements and expected need dates.
- 8.26.2.1.6. OO-ALC/LMBT (ICBM SPO Ground Systems-Trainers Branch):
  - 8.26.2.1.6.1. LMBT will contract appropriately to ensure uninterrupted support of the MPT/MEP software.
- 8.26.2.1.7. OO-ALC/LMET (ICBM SPO SMIC):
  - 8.26.2.1.7.1. LMET will maintain and schedule SMIC operations.

KAI LEE NORWOOD, Col, USAF  
Director of Logistics

## Attachment 1

## GLOSSARY OF REFERENCES, TERMS, ABBREVIATIONS AND ACRONYMS

*References*

AFSPCHOI10-1, *Mission Needs and Operational Requirements Guidance and Processes*

AFPD10-6, *Mission Needs and Operational Requirements*

NUI10-6, *Operations Review Board*

AFPD10-9, *Lead Operating Command Weapon Systems Management*

NUI10-12, *Integrated Tactical Warning and Attack Assessment (ITW/AA) System Certification Process*

NUI10-21, *Change Control Management Process for the Integrated Tactical Warning and Attack Assessment Systems*

NUPD10-25, *System Management for the Integrity of the Integrated Tactical Warning and Attack Assessment (ITW/AA) System*

AFI10-601, *Mission Needs and Operational Requirements Guidance and Procedures*

AFSPCI10-601, *Declaration of Initial Operating Capability (IOC) and Full Operational Capability (FOC)*

AFI10-901, *Lead Operating Command – Communications and Information Systems Management*

(S) AFSPCI10-120107/11/18G(BP)/88772/12/MW, *Combined USAF/RAF Operations Manual (COM) Ballistic Missile Early Warning System (BMEWS) Site III, RAF Fylingdales, UK (U)*

AFPD21-1, *Managing Aerospace Equipment Maintenance*

MWSSS OI 21-4, *Software Configuration Management*

MWSSS OI 21-7, *Configuration Control Board*

MWSSS OI 21-14, *New Software Maintenance Version Release Process*

AFI21-116, *Maintenance Management of Communications-Electronics*

21SWI21-10401, *Change Control Management of the Integrated Tactical Warning/ Attack Assessment (ITW/AA) Missile Warning and Space Surveillance Assets*

AFSPCI32-1005, *Intercontinental Ballistic Missile (ICBM) Real Property/Real Property Installed Equipment Responsibilities*

AFH32-9007, *Managing Air Force Real Property*

AFPD33-1, *Command, Control, Communications, and Computer (C4) Systems*

721SPTGI33-7, *Integration Control Board (ICB) Process*

AFI33-202, *Computer Security Program*

ITW/AA OI 63-004, *Systems Engineering Technical Group (SETG)*

SND C2 SPO OI63-004, *Systems Engineering Technical Group (SETG)*

AFPD63-11, *Modification System*

AFMCPAM63-104, *Configuration Management under Acquisition Reform*

AFI63-1101, *Modification Management*

AFSPCI99-101, *Operational Test and Evaluation for Space and Intercontinental Ballistic Missile Operations*

MIL-STD-100, *Engineering Drawing Practices*

MIL-STD-961, *Military Specifications and Associated Documents*

MIL-STD-973, *Configuration Management*

DoD 5000.2-R, *Mandatory Procedures for Major Defense Acquisition Programs (MDAPS) and Major Automated Information System (MAIS) Acquisition Programs*

MIL-T-31000, *Technical Data Packages*

*Charter between NORAD, USSPACECOM, AFSPC, NAVSPACE, ARSPACE and Cheyenne Mountain Operations Center (CMOC) for ITW/AA System Operations Approval Board (OAB)*

*Charter, System Requirements Panel/System Requirements Council (SRP/SRC)*

*Integrated Tactical Warning and Attack Assessment (ITW/AA), Configuration Baseline (CB)*

*Memorandum of Agreement between AFSPC and AFMC (Software Normalization), 16 Feb 93*

*NORAD/USSPACECOM/AFSPC/SND, C2 Battle Management Command and Control (BMC2) Systems Requirements Council Charter*

*Strategic and Nuclear Deterrence (SND) Command and Control (C2) System Program Office Software Policies and Procedures*

### ***Terms***

**Acceptance Test**—For trainer software, the AT and SIT are combined and conducted by Contractor Logistical Support, 20 AF/DO and the ICBM SPO to determine if the trainer software is functionally equivalent to the operational software and it satisfies user requirements.

**Accredited Software**—Software approved by the Designated Approval Authority as having adequate security protection in accordance with the appropriate security instructions and directives.

**Approval**—Approval of a proposed modification occurs when the approval board voting membership, after having considered all review comments, the AFMC or other supporting agency preliminary engineering and cost evaluation, and funding availability, approves the requested change for implementation.

**Category I Changes**—Changes to the SIOP Parametric database, Reserve Force Target List database and/or readily identifiable, minor logic changes in the Message Processing Computer Software Configuration Item. Category I changes do not require technical research, anomaly replication in the test bed or extended testing requirements.

**Category II Changes**—Changes to the software logic outside the limited scope of Category I changes. Category II changes may require technical research and anomaly replication in the test bed or drive extended testing requirements.

**Certified Software**—HAC/RMPE software approved by the Chairman, Operations Control Board as suitable for operational use based on test results.

**Change Request**—General term used in reference to an AF Form 1067, Modification Proposal, or equivalent, used to document a proposed change to a weapon system or to legacy infrastructure systems.

**Configuration Control**—The systematic process of proposal, justification, evaluation, coordination, approval or disapproval, issuing deviations and waivers to approved configurations, and ensuring the implementation of approved changes in the baseline configuration. Configuration control begins with the establishment of the functional baseline and continues throughout the life of a system.

**Configuration Control Board**—An ICBM SPO-chaired board composed of technical, administrative and user representatives who approve or disapprove proposed configuration changes to OO-ALC/LMBT weapon system baselines.

**Configuration Management**—A discipline applying technical and administrative direction and surveillance to identify and document the functional and physical characteristics of a system, control changes to a system and its documentation, and record and report change processing and implementation status.

**Contractor Logistical Support**—Contractor support used to analyze, modify, compile, test and disseminate MPT and MEP trainer software. This contractor is responsible for maintenance of all HAC/RMPE trainer software. The contractor is managed by and reports to the ICBM SPO.

**Cost and Engineering Analysis/Data Package**—Includes validated AF Form 1067 with the technical description, a draft SAMP, a Safety Analysis (if required), an APB for those programs > \$1M, a CAR (if required), and associated briefing charts.

**Development Test and Evaluation**—A series of tests conducted by an ICBM SPO agent to verify the correctness of modified software and to verify the system still satisfies functional requirements. For operational software, DT&E is culminated by a System Integration Test, where a complete set of updated software is tested on an operational Weapon System Control Console. For trainer software, a series of tests conducted by the CLS prior to delivery of the trainer software for combined SIT/AT.

**Effective Date**—The date when the missile crew force begins using the new or changed procedure or software.

**Emergency Software Changes**—Changes that result from a deficiency or requirement that demands immediate action to modify HAC/RMPE software.

**Firmware**—The combination of a hardware device and computer instructions or computer data that resides as read-only software on the hardware device.

**Force Development Evaluation**—For operational HAC/RMPE software, a series of tests conducted by the 576 FLTS and observed by 20 AF/DO to determine if the software satisfies user requirements.

**HAC/RMPE Software**—Unless otherwise specified, the term "HAC/RMPE software" refers to the HAC/RMPE software for the WSCC in the Launch Control Centers (LCCs), the test version of this software, and the HAC/RMPE portion of the MPT and MEP software. The term "operational HAC/RMPE software" refers to only the software used in the LCCs. The term "test HAC/RMPE software" refers to a non-SIOP version created for anomaly resolution and weapon system analysis. The term "HAC/RMPE MPT/MEP software" refers to only the HAC/RMPE portion of the MPT/MEP software.

**HAC/RMPE—Software Support Facility--**The HSSF is owned and operated by Detachment 1, Ogden Air Logistics Center (Det 1, OO-ALC) and is located at Offutt Air Force Base (AFB). The HSSF is responsible for analyzing, modifying, testing and disseminating revised operational and test HAC/RMPE software.

**Hardware**—Physical items such as weapons, aircraft, ships, tools, vehicles and their components, but not including computer programs or technical documentation.

**Joint Programs**—Any mission systems that have users from other commands, services or agencies are considered joint programs. The DoD appoints the lead service. If the Air Force is appointed the lead service, then HQ USAF appoints a lead command via AFPD10-9, *Lead Operating Command Weapon Systems Management*. The lead command is responsible for the administrative details and advocacy for procurement funds for any modifications to joint programs, regardless of what service or agency requests the change.

**Lead Command**—Air Force MAJCOM appointed in AFPD10-9 to be the spokesperson on behalf of the using commands. The Lead Command is responsible for programming requirements and prioritization by building consensus and advocating the needs of requiring commands.

**Lead Service**—The DoD organization or service component which has programming and prioritization responsibilities for a joint system. Appointed by a CJCS Memorandum of Policy or other official document.

**Level 1 Software Support**—Level 1 support is operator provided (AFSPC and 392 TRS). The seven Level 1 support functions are: identify operational requirements, validate operational capability, certify operational capability, control operational configuration, maintain database operational parameters, identify problems and restore to operations (see Attachment 2 for details). These functions are further defined in the Software Normalization MOA and through procedures jointly developed with the weapon system manager.

**Level 2 Software Support**—Level 2 support is provided by AFMC (e.g., ICBM SPO, AFSCN CUE SPO, etc.). The twelve Level 2 support functions are: fix emergency problems; problem analysis; develop technical solutions; design, develop and modify software; certify software releases/modifications; maintain integration; maintain integrity; distribute software releases; perform configuration management; improve technology; perform special studies; and maintain software support resources (see Attachment 2 for details). These functions are further defined in the Software Normalization MOA.

**Modification**—An alteration to a configuration item applicable to aircraft, missiles, support equipment, ground stations software (imbedded), trainers, etc. As a minimum, the alteration changes the form, fit, function or interface of an item. There are two types of modifications, temporary and permanent, which can be made to weapon systems. Modifications may correct safety or materiel deficiencies, improve reliability and maintainability or add/ remove capability.

**Modification Proposal, AF Form 1067**—A form used to formally request a change to existing software, identify a new requirement, suggest an enhancement or identify an anomaly in existing software.

MPT/MEP Priority Scale

One (1) - A SIOP change or a change needed to return functionality to MPT/MEP.

Two (2) - A change needed to correct a deficiency that affects training and has no workaround.

Three (3) - A change needed to correct a deficiency affecting training but workaround is in place.

Four (4) - A change that corrects a deficiency which has minimal effect on training.

Five (5) - A change that has no training impact.

**Non-Scheduled Software Changes**—Routine changes not assigned to a scheduled release.

**Operations Control Board**—A HQ AFSPC board that validates and prioritizes change requests and forwards them to the ICBM SPO for inclusion in a future software update. The OCB selects a solution from the alternatives proposed by the ICBM SPO. The OCB will review and resolve AFSPC concerns when Level 1 representatives on the CCB disagree with CCB actions. OCB certification is required before changed software can be delivered to and used in the field. For non-SIOP changes, the OCB determines the effective date.

Operational Software Priority Scale

One (1) - A SIOP change or a change needed to return functionality to HAC/RMPE.

Two (2) - A change needed to correct a message processing deficiency, reception deficiency or a deficiency that partially affects system functionality with no workaround.

Three (3) - A change needed to correct a message processing deficiency, reception deficiency or a deficiency that partially affects system functionality but a workaround is in place.

Four (4) - A change that corrects a deficiency which has no effect on system functionality.

Five (5) - A change that is an improvement or enhancement to the system.

**Precedence**—A category assigned to an AF Form 1067 originated by 20 AF indicating its urgency (or lack thereof). The three categories are routine, urgent and emergency. The originator of the AF Form 1067 will recommend a precedence. The Requirements Screening Panel will approve precedence for non-SIOP change requests. The OCB will validate precedence for SIOP change requests.

**Present In The Field**—A software release is considered present in the field when it is 1) at the unit requiring it, 2) available in the appropriate number of copies and 3) certified by the OCB.

**Priority**—A rating assigned by the OCB to an AF Form 1067 originated by 20 AF to indicate the mission impact for operational changes and the training impact for MPT/MEP changes. The following rating scale is used by the OCB:

**Requirements Screening Panel**—A 20 AF panel that reviews, consolidates and approves/disapproves change requests received from system operators and ICBM personnel. Approved change requests are forwarded to the OCB.

**Reserve Force Target List Revision**—An update to the Reserve Force Target List database that occurs once every 4 months. An operational software revision may or may not be delivered in conjunction with a RFTL revision.

**Routine Software Changes**—Changes due to deficiencies or requirements that do not demand immediate action.

**Scheduled Software Changes**—A planned revision that incorporates routine change requests. Scheduled revisions include the SIOP revision, RFTL revision and planned baseline updates to incorporate routine software changes. The OCB may declare a scheduled change due to an extended period without a scheduled change.

**SIOP Changes**—Changes to the HAC/RMPE software driven by revisions to the SIOP planning values

and timing (contained in the SIOP Parametric database), Emergency Action Messages (EAMs) and Emergency Action Procedures (EAPs). SIOP changes are usually incorporated into the HAC/RMPE software during the SIOP revision.

**SIOP Revision**—A scheduled software change that incorporates revised SIOP plans and procedures. SIOP revision changes must be incorporated in the HAC/RMPE software and be present in the field before the CJCS-specified effective date.

**Software**—A combination of associated computer instructions and computer data definitions required to enable the computer hardware to perform computational or control functions.

**System Certification**—HQ USSPACECOM/J6C makes an independent assessment of the change's impact to the integrity and technical performance of the ITW/AA System. The formal System Certification decision occurs after the change is operationally accepted but before it is operationally approved.

**System Integration Test**—For 20 AF operational software, the culmination of DT&E by testing a complete set of updated software on an operational WSCC at the ICBM SPO Strategic Missile Integration Center. The tests include regression, exception and stress testing of the software changes and will functionally exercise 100 percent of the communications links and the Console Operating Program interfaces to ensure proper transfer and interpretation of data and to validate software performance. The test will be conducted under a realistic simulation of operating conditions. SIT will alternate between the A and B weapon system configuration sites at the SMIC and will always be opposite of the configuration used for OT&E at Vandenberg AFB. For trainer software, the SIT and AT are combined and conducted by CLS, AFSPC, 20 AF/DO and the ICBM SPO to determine if the trainer software is functionally equivalent to the operational software and it satisfies user requirements.

**System Operator**—This term includes any AFSPC or AETC personnel who operate the WSCC, MPT, MEP or test site.

**Urgent Software Changes**—Changes due to deficiencies or requirements that do not constitute an emergency but must be corrected before the next scheduled change.

**Validation**—AFSPC requirements, operations, maintenance and logistics organizations review each proposed change to operational systems and the associated proposed solution for essentially, cost effectiveness and feasibility. Comments by the appropriate validation board are included on the AF Form 1067, or equivalent form, prior to further disposition.

**Weapon System**—A combination of elements that function together to produce the capabilities required to fulfill a mission need, including hardware, equipment, software, and all Integrated Logistics Support elements, but excluding construction or other improvements to real property. One or more weapons with all related equipment, materials, services, personnel and means of delivery and deployment (if applicable) required for self-sufficiency.

### *Abbreviations and Acronyms*

**ACAT**—Acquisition Category

**AETC**—Air Education and Training Command

**AFMC**—Air Force Materiel Command

**AFSATCOM**—Air Forces Satellite Communications System

**AFSCN**—Air Force Satellite Control Network  
**AFSPC**—Air Force Space Command  
**AFSPCI**—Air Force Space Command Instruction  
**AMWC**—Alternate Missile Warning Center  
**APB**—Acquisition Program Baseline  
**AT**—Acceptance Test  
**ATE**—Automatic Test Equipment  
**BES**—Budget Estimate Submission  
**BMC2**—Battle Management Command and Control  
**BMEWS**—Ballistic Missile Early Warning System  
**C2**—Command and Control  
**CAR**—Contract Action Request  
**CB**—Configuration Baseline  
**CC**—Configuration Control  
**CCB**—Configuration Control Board  
**CCBD**—Change Control Board Directive  
**CCM**—Configuration Control Manager  
**CEM**—Civil Engineering Manual  
**CJCS**—Chairman, Joint Chiefs of Staff  
**CLS**—Contractor Logistical Support  
**CM**—Configuration Management  
**CMB**—Configuration Management Board  
**CMC**—Cheyenne Mountain Complex  
**CMM**—Capability Maturity Model  
**CMOC**—Cheyenne Mountain Operations Center  
**COM**—Combined USAF/RAF Operations Manual  
**CRF**—Change Request Form  
**CUE**—Common User Element  
**DMSP**—Defense Meteorological Satellite Program  
**DoD**—Department of Defense  
**DSCS**—Defense Satellite Communications System  
**DSP**—Defense Support Program

**DT&E**—Development Test and Evaluation

**EAP**—Emergency Action Procedures

**ECP**—Engineering Change Proposal

**EWO**—Emergency War Order

**FDE**—Force Development Evaluation

**FLTS**—Flight Test Squadron

**FOC**—Full Operational Capability

**GPS**—Global Positioning System

**HAC/RMPE**—Higher Authority Communications/Rapid Message Processing Element

**HSSF**—HAC/RMPE Software Support Facility

**HVAC**—Heating, Ventilation and Air Conditioning

**IAW**—In Accordance With

**ICBM**—Intercontinental Ballistic Missile

**ICWG**—Interface Control Working Group

**IOC**—Initial Operating Capability

**IPT**—Integrated Product Team

**ITF**—Integrated Test Facility

**ITW/AA**—Integrated Tactical Warning and Attack Assessment

**IWSD**—Integrated Weapon System Database

**IWSM**—Integrated Weapon System Management

**LCC**—Launch Control Center

**MAJCOM**—Major Command

**MCL**—Master Change Log

**MDAP**—Major Defense Acquisition Program

**MEP**—Minuteman Enhanced Procedures

**MFAP**—Missile Facility Alteration Panel

**MILSATCOM**—Military Satellite Communications

**MOA**—Memorandum of Agreement

**MOC**—Missile Operations Center

**MOF**—Missile Operations Flight

**MPT**—Missile Procedures Trainer

**MRB**—Modification Review Board

**MTTR**—Mean Time To Repair  
**NATO**—North Atlantic Treaty Organization  
**NOAA**—National Oceanic and Atmospheric Administration  
**NORAD**—North American Aerospace Defense Command  
**NUDET**—Nuclear Detonation  
**NUI**—NORAD/USSPACECOM Instruction  
**OAB**—Operations Approval Board  
**OAP**—Operations Approval Panel  
**OARB**—Operations Approval Review Board  
**OASB**—Operations Approval Sub-Board  
**OCB**—Operations Control Board  
**OI**—Operating Instruction  
**OO-ALC**—Ogden Air Logistics Center  
**OPR**—Office of Primary Responsibility  
**ORD**—Operational Requirements Document  
**OT&E**—Operational Test and Evaluation  
**PEM**—Program Element Manager  
**PMD**—Program Management Directive  
**RAF**—Royal Air Force  
**RCM**—Requirements Correlation Matrix  
**RDT&E**—Research, Development, Testing and Evaluation  
**REACT**—Rapid Execution and Combat Targeting  
**RFTL**—Reserve Force Target List  
**RP/RPIE**—Real Property/Real Property Installed Equipment  
**RRC**—Requirements Review Council  
**RSP**—Requirements Screening Panel  
**RVB**—Requirements Validation Board  
**SACCS**—Strategic Automated Command and Control System  
**SAMP**—Single Acquisition Management Plan  
**SBIRS**—Space-Based Infrared System  
**SCE**—Software Capability Evaluation  
**SCF**—Standard Change Form

**SCN**—Specification Change Notice  
**SEI**—Software Engineering Institute  
**SETG**—System Engineering Technical Group  
**SIOP**—Single Integrated Operational Plan  
**SIT**—System Integration Test  
**SM-ALC**—Sacramento Air Logistics Center  
**SMIC**—Strategic Missile Integration Center  
**SND**—Strategic and Nuclear Deterrence  
**SPD**—System Program Director  
**SPO**—System Program Office  
**SRC**—System Requirements Council  
**SRP**—System Requirements Panel  
**SVD**—Software Version Document  
**TCTO**—Time Compliance Technical Order  
**TRS**—Training Squadron  
**TRG**—Training Group  
**UCN**—Universal Control Number  
**UK**—United Kingdom  
**USNDS**—U.S. Nuclear Detonation Detection System  
**USSPACECOM**—United States Space Command  
**USSTRATCOM**—U.S. Strategic Command  
**VCN**—Version Content Notification  
**VRM**—Version Release Manager  
**WSCC**—Weapon System Control Console  
**WSCE**—Weapon System Control Element

**Attachment 2****LEVEL 1 AND 2 SOFTWARE SUPPORT****A2.1. Level 1 - Wing/Organizational Level Maintenance:**

A2.1.1. Identify Operational Requirements. Identify, prioritize and approve new requirements for, or changes to, an operational system. Select the best overall solution to meet requirements from the executable option(s) provided by AFMC (consider technical, schedule, cost and risk factors in making the decision). Participate in system life-cycle activities such as program management reviews, design reviews, tests and audits for Level 2 modifications.

A2.1.2. Validate Operational Capability. Participate in the development and planning of FDE. Perform OT&E to determine the operational effectiveness and suitability of a system under realistic operating/combat conditions and to determine if operational performance requirements and supporting requirements (for example: procedures, documentation and training) specified in requirements documents have been satisfied.

A2.1.3. Certify Operational Capability. Determine that a software release is suitable for operational use, based on OT&E results and any operational trial period held. For ITW/AA systems, AFSPC will ensure data integrity is maintained.

A2.1.4. Control Operational Configuration. Prioritize and approve the schedule for installation of modifications and software releases for a system.

A2.1.5. Maintain Database Operational Parameters. Maintain database (for example: change operational data values). This does not normally include changing the structure of the database, values embedded in the system's code or the system's code embedded in the database.

A2.1.6. Identify Problems. Identify symptoms (for example: error codes, error messages and invalid output products) that indicate the system is not performing according to the system specifications. The operator will identify the priority of each reported problem.

A2.1.7. Restore to Operations. Restore the system to operational status through the use of AFMC-defined procedures or the installation of an AFMC-provided software release. For some systems, AFSPC or other using agencies may need a small number of people who are expert in systems operations and who can determine when systems require Level 2 (AFMC) support.

**A2.2. Level 2 - SPO/Headquarters Level Maintenance:**

A2.2.1. Fix Emergency Problems. Expedite emergency changes. This usually requires rapid, out-of-cycle problem resolution and solution implementation. Emergency changes refer to the definition contained in MIL-STD-973.

A2.2.2. Problem Analysis. Identify causes of problems and determine proposed solution(s).

A2.2.3. Develop Technical Solutions. Provide the customer the proposed options, cost estimates, recommendations, impacts to other systems and perceived risks associated with proposed technical solution(s) to meet validated requirements. The information must be sufficient for the customer to make informed decisions on the risks and the total system costs associated with the implementation of the proposed technical solutions. Also, the information should identify any consolidation of validated requirements.

A2.2.4. Design, Develop and Modify Software. Develop and maintain operational software to satisfy requirements, prevent performance degradation, prevent or correct system failures, provide for system growth, or improve overall system capabilities and effectiveness, as directed by the user. Conduct comprehensive FDE under realistic operating conditions.

A2.2.5. Certify Software Releases/Modifications. Certify that new or modified software releases satisfy the validated requirements and meet Air Force, NORAD, USSPACECOM and AFSPC standards.

A2.2.6. Maintain Integration. Ensure all required interfaces within and among systems are identified, maintained and not corrupted.

A2.2.7. Maintain Integrity. Ensures changes will not degrade the integrity of the system (the system will correctly process the data it receives, will be reliable and accurate and will be able to meet mission response requirements).

A2.2.8. Distribute Software Releases. Provide the customer a certified software release package containing, for example, the modified software baseline, version description, installation procedures, operator checklists, system/training documentation and results of developmental tests. Provide any additional software or data required by AFSPC for exercise and test scenarios associated with the software release.

A2.2.9. Perform Configuration Management. Identify, control, track and audit the functional and physical characteristics of a system, its interfaces and documentation.

A2.2.10. Improve Technology. Identify and perform technology upgrades or modifications, with user approval, to increase the system's flexibility, power, readiness and safety; correct design deficiencies; improve software processes; maintain the combat effectiveness of the operational system; or decrease operations and maintenance costs.

A2.2.11. Perform Special Studies. Perform special studies that the operational command may occasionally need.

A2.2.12. Maintain Software Support Resources. Perform functions necessary to maintain software support resources and infrastructure to assure continued software support of AFSPC operational systems.

**Attachment 3****AERONAUTICAL SYSTEMS RVB PROCESS**

**A3.1. Program Baseline.** The Aeronautical Systems RVB process is used to establish a new program or configuration baseline as well as to change an existing program baseline or configuration baseline. A worksheet similar to the one shown below will be completed by the HQ AFSPC/LGM/DOM project officer to determine the actions required in support of this process.

A3.1.1. Is there an approved program baseline for the program?

A3.1.1.1. If no, go to paragraph A3.1.2.

A3.1.1.2. If yes, indicate how it was established:

A3.1.1.2.1. By CCB, RVB, or OAB

A3.1.1.2.2. Does the change impact the approved program baseline as documented in the Acquisition Program Baseline (APB) or Single Acquisition Management Plan (SAMP)?

A3.1.1.2.2.1. If yes, go to paragraph A3.1.2.

A3.1.1.2.2.2. If no, a program RVB data package is not required. Go to paragraph A3.2 to determine the effect on the configuration baseline.

A3.1.2. Prepare and process the Program Baseline RVB Data Package for establishment of a new program or revision to an existing program baseline. Chapter 2, paragraph 2.4., identifies the process for coordination of the Program Baseline RVB Data Package from identification of an issue through submittal to the RVB Secretariat for RVB processing.

A3.1.2.1. Prepare the Program RVB Data Package. The contents are the Form 1067, which includes a technical description, SAMP, Contract Action Request (CAR), if required, and the CCB Briefing Charts (reference paragraph A3.4.)

A3.1.2.1.1. Obtain Program Control coordination required for this RVB action, verifying cost as well as type and year of funding.

A3.1.2.1.2. Submit the Program Baseline RVB Data Package to the RVB Secretariat.

A3.1.2.2. Brief RVB using the RVB briefing charts provided with the RVB Data Package.

A3.1.2.3. Resolve any RVB action items and advise the Secretariat.

A3.1.2.4. Implement the program upon receipt of the Change Control Board Directive (CCBD) from the Configuration Management Office.

A3.1.2.4.1. For organic programs, take the necessary actions to implement organic IPT management and depot maintenance actions.

A3.1.2.4.2. For contract programs, process the required documents to support contractual implementation.

**A3.2. Configuration Baseline.** Determine the effect on the configuration baseline and process as follows:

A3.2.1. Is an existing configuration baseline (functional, allocated or product) affected or is a new baseline being established?

A3.2.1.1. Identify the documentation affected by the revised/new baseline.

System Spec, Development Spec,

Product Spec, Drawing, or Interface Control Document

A3.2.1.2. If an existing specification is affected, the PM shall prepare and submit, or have a contractor prepare and submit, an Engineering Change Proposal/Specification Change Notice (SCN) to the Secretariat.

A3.2.1.3. If a new specification is required, the PM shall prepare and submit, or have a contractor prepare and submit, a specification to the Secretariat.

A3.2.1.4. If a drawing is changed, is it a Class I or II? (see paragraph A3.3 for Class I and II definitions.)

A3.2.1.4.1. If Class I, the PM shall prepare and submit, or have a contractor prepare and submit, an ECP to the Secretariat. The ECP must contain cost information (amount, year and type, etc.); if there is no cost an explanation is required in the enclosure.

A3.2.1.5. Does the change impact the contract cost?

A3.2.1.6. If yes, provide an explanation to HQ AFSPC/LGM

A3.2.1.7. If no, a CAR is not required.

A3.2.2. The steps for processing configuration baseline data are as follows:

A3.2.2.1. Establish the RVB review schedule with the RVB Secretariat. The dates to be established and targets for processing are:

A3.2.2.1.1. When change reviewers comments are due to the division. (Normally 10 days after RVB Secretariat receives package.)

A3.2.2.1.2. When Project Officer consolidated comments are due to the RVB Secretariat. (Normally 5 days after comments are received.)

A3.2.2.1.3. Tentative RVB date. (Normally 3 weeks from receipt of original package by RVB Secretariat.)

A3.2.2.2. Review configuration baseline data and comments received from RVB members and supporting offices. Coordinate comments with the contractor, submitting offices, other IPTs and with other reviewing agencies (Air Force Space Command, National Security Agency (NSA), etc.) and consolidate the comments for submittal to the RVB Secretariat. (Normally 5 days after receipt of comments).

A3.2.2.3. Verify Configuration Baseline Data for changes or departures (e.g., ECPs, deviations, waivers, etc.) are ready for RVB review.

A3.2.2.4. Submit comments and a copy of the validated data package to the RVB Secretariat by the date identified in the transmittal letter

A3.2.2.5. Prepare RVB briefing charts in the format identified in Attachment 4. (Submit final charts to RVB Secretariat the Friday before RVB.)

A3.2.2.6. Brief RVB using briefing charts prepared in Aeronautical Systems RVB format.

A3.2.2.7. Implement the program IAW the RVB direction upon receipt of the CCBD from the RVB Secretariat. Implementation shall be as follows:

A3.2.2.7.1. For organic programs, take the necessary actions to implement organic IPT management and depot maintenance actions.

A3.2.2.7.2. For contract programs, process the required documents to support contractual implementation.

### **A3.3. Class I and II Definitions:**

A3.3.1. Class I – The change shall be Class I, if any of the following factors are impacted:

A3.3.1.1. If the Functional Configuration Documentation (FCD) or Allocated Configuration Documentation (ACD), once established, is affected to the extent that any of the following requirements would be outside specified limits or specified tolerances:

A3.3.1.1.1. Performance.

A3.3.1.1.2. Reliability, maintainability or survivability.

A3.3.1.1.3. Weight, balance, moment of inertia.

A3.3.1.1.4. Interface characteristics.

A3.3.1.1.5. Electromagnetic characteristics.

A3.3.1.1.6. Other technical requirements in the specifications.

#### **NOTE:**

Minor clarifications and corrections to an FCD or ACD shall be made only as an incidental part of the next Class I ECP and accompanying Specification Change Documentation (SCD) or Notice of Revision (NOR), unless otherwise directed by the Government.

A3.3.1.2. If a change to the Product Configuration Documentation (PCD), once established, will affect the FCD or ACD, or one or more of the following:

A3.3.1.2.1. GFE.

A3.3.1.2.2. Safety.

A3.3.1.2.3. Compatibility or specified interoperability with interfacing CIs, support equipment or support software, spares, trainers or training devices/equipment/software.

A3.3.1.2.4. Configuration to the extent that retrofit action is required.

A3.3.1.2.5. Delivered operation and maintenance manuals for which adequate change/revision funding is not provided in existing contracts.

A3.3.1.2.6. Preset adjustments or schedules affecting operating limits or performance to such extent as to require assignment of a new identification number.

A3.3.1.2.7. Interchangeability, substitutability or replaceability as applied to CIs, and to all subassemblies and parts except the pieces and parts of non-reparable subassemblies.

A3.3.1.2.8. Sources of CIs or repairable items at any level defined by source-control drawings.

A3.3.1.2.9. Skills, manning, training, biomedical factors or human-engineering design.

A3.3.1.3. If any of the following contractual factors are affected:

A3.3.1.3.1. Cost to the Government including incentives and fees.

A3.3.1.3.2. Contract guarantees or warranties.

A3.3.1.3.3. Contractual deliveries.

A3.3.1.3.4. Scheduled contract milestones.

A3.3.2. Class II. The change shall be Class II when it does not impact any of the Class I factors.

**A3.4. Aeronautical Systems Requirements Validation Board Worksheet:**

A3.4.1. Complete the RVB Worksheet (See Table A3.1. below). A written response from all offices on distribution must be received PRIOR to inclusion on the RVB Agenda.

**Table A3.1. Sample Aeronautical Systems RVB Worksheet.**

FACTOR	YES	NO
PROBLEM / SOLUTION		
COST / CONSIDERATION		
SPECIFICATION IMPACT/SCN INCLUDED		
SCHEDULE IMPACT		
PART NUMBERS - FROM and TO		
EFFECTIVITY		
PRODUCTION		
RETROFIT		
IMPLEMENTATION PLAN		
TECH ORDER IMPACTS		
INTERFACES / ICDs, IRs		
LOGISTICS		
QUALITY / WARRANTIES		
SAFETY / NUCLEAR CERTIFICATION		
HDCNs		
RELIABILITY		
RECURRING DEVIATION/WAIVER		
DASH NUMBER ECPs (for all affected CIs)		
MAINTENANCE IMPACTS		

A3.4.2. PM: Review ECP/Deviation/Waiver comments to ensure each factor was addressed.

Indicate "YES" if ECP/Deviation/Waiver is correct. Indicate "NO" if ECP/Deviation/Waiver is not correct and provide a comment for inclusion in the RVB Data Package.

A3.4.3. Does the AF Form 1067 affect the approved program baseline? Yes or No?

If YES, process a program baseline change.

A3.4.4. Have all comments received been included in your comments or resolved with the submitter? Yes or No? If NO, be prepared to discuss the issue at the RVB.

A3.4.5. Are all appropriate forms available and complete for RVB presentation?

A3.4.6. Each worksheet will be completed, signed, dated and forwarded to the RVB Secretariat.

### Attachment 4

#### AERONAUTICAL SYSTEMS RVB BRIEFING

Project Officers are required to bring hard copies of Briefing Charts to the Aeronautical Systems RVB in landscape format and 25pt (1/4 inch tall) type size or greater, with the following information:

- Title Page
- Name of Program
- Briefer/Office/Number DSN/COMM/FAX
  - Description of Change
  - Indicate the baseline impacted. (Program or Configuration)
- Provide background. (How was change identified? If it is a revision, briefly discuss prior submittals and why a revision is required.)
- Provide a technical discussion of the change and any factor marked “No” on the RVB Worksheet (See Attachment 3).
- Develop a maintenance concept and coordinate this concept with the Maintenance Division. Forward the program scope, maintenance concept, detailed program schedule, and funding availability information to HQ AFSPC/LGM for determination of the ability to perform the maintenance, manufacture or repair organically.
  - Cost
  - Provide funding requirements verified with HQ AFSPC/DOMO/LGX PEMs. Funding requirements include organic and contractual funds. Organic costs should be coordinated with OO-ALC/LM (or WR-ALC/LUH for helicopters).
  - Total dollar (Increase/Credit)

Address consideration for deviation and waivers, and for AF Form 1067s that are a reduction in contractor effort.

- Type of money/year
- Funds available now
- Funds in budget but not available now
- Funds not required
  - Schedule
  - Schedule impact on existing schedules or any new schedule
  - RVB Worksheet
  - Indicate the offices the package was distributed to and identify the disposition of the comments.
- Provide a briefing chart from the RVB Worksheet that identifies the office symbol "RESPONSE" column. Omit "N/A" from this chart.
  - Recommendations
- Indicate the RVB recommendations