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Operations

OPERATIONAL CAPABILITY REQUIREMENTS DEVELOPMENT

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This publication implements Air Force Policy Directive (AFPD) 10-6, *Capabilities-Based Planning & Requirements Development*, Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01, *Joint Capabilities Integration and Development System* (JCIDS) and the accompanying Joint Staff (JS)/J8 JCIDS manual, and CJCSI 6212.01, *Interoperability and Supportability of Information Technology and National Security Systems* (IT-NSS). It establishes the guidelines, policies, and procedures for defining, developing, documenting, validating, approving, and managing Air Force operational capability requirements in support of the *Defense Acquisition Management Framework*. This AFI must be used with the policies in Department of Defense Directive (DoDD) 5000.01, *The Defense Acquisition System*, and DoD Instruction (DoDI) 5000.02, *Operation of the Defense Acquisition System* (collectively called the DoD 5000 series). This AFI must be used in conjunction with AFI 63-101, *Acquisition and Sustainment Life Cycle Management*, AFI 99-103, *Capabilities-Based Test and Evaluation*, AFI 10-604, *Capabilities-Based Planning*, and AFI 63-131, *Modification Program Management*. This AFI applies to all Air Force personnel who develop, review, approve, manage, or use documents in the Air Force Operational Capability Requirements Development Process. This instruction applies to all unclassified, collateral, compartmented and special access programs. Adherence is mandatory, except when statutory requirements, DoD, or Joint Staff directives override. Additional guidance is located through the Air Force Portal on the AF/A5RP Requirements web site at **https://www.my.af.mil/gcss-af/afp40/USAF/ep/globalTab.do?command=org&channelPageId=-569424&pageId=681742**. If there is any conflicting guidance between this AFI and DoD 5000 series or CJCSI 3170.01, the DoD or CJCS guidance shall take precedence. This AFI may be supplemented at any level, but all supplements that directly implement this Instruction must be routed to AF/A5R for coordination prior to certification and approval. Refer recommended changes and questions

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SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. The AFI incorporates changes necessary to align with recent updates to DoD 5000 series and CJCSI 3170 policies, and implements requirements guidance developed as a result of Air Force acquisition improvement events. Summary of major changes include: added language on requirements activities necessary to support the Materiel Development Decision (MDD); information on the expanded scope of Air Force Requirements Oversight Council (AFROC); adjustments to Urgent Operational Need (UON) language; and removal of the Joint Capabilities Document (JCD), Air Force Capabilities Document (AFCD), Air Force Combat Capability Document (CCD), and the Air Force doctrine, organization, training, materiel, leadership and education, personnel, or facilities (DOTMLPF) Change Recommendation (DCR).

Chapter 1

VISION & IMPLEMENTATION CONCEPTS

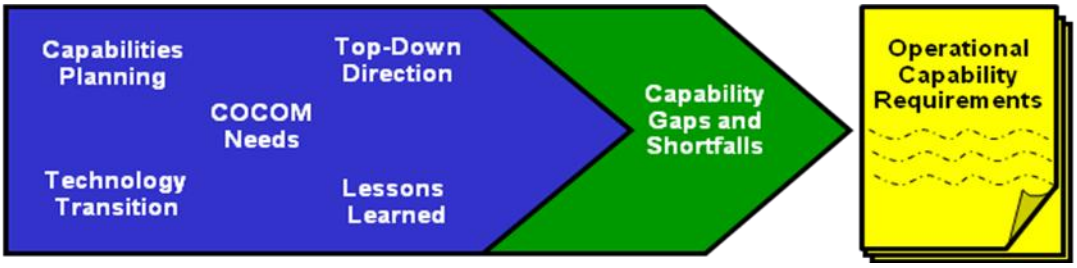
1.1. Vision. The primary intent of this instruction is to facilitate timely development and fielding of affordable and sustainable operational systems needed by the combatant commander. The primary goal is to fulfill stated defense strategy needs with effects based, capabilities-focused materiel and non-materiel solutions. These solutions must be well integrated to provide suitable, safe, and interoperable increments of capability that are affordable throughout the life cycle. The overarching strategic guidance detailed in the National Security Strategy (NSS), the National Strategy for Homeland Security, the National Defense Strategy (NDS), the National Military Strategy (NMS), the Defense Planning and Programming Guidance, the Guidance for the Employment of the Force (GEF), and the most recent Quadrennial Defense Review (QDR) lays the foundation for the Air Force's needed capabilities. Capabilities are employed to achieve desired effects in support of these strategies. The Air Force must be innovative and flexible in the way it resources development of current and future defense strategies. The Air Force must be able to integrate functions such as strategic planning, capabilities planning, early systems engineering, operational capability requirements development, acquisition, lifecycle management, and program and budget execution in order to effectively develop and field needed operational systems in a timely manner.

1.2. Joint Capabilities Integration and Development System (JCIDS). The Air Force operational capability requirements development process is closely linked and complies with its Joint overarching guidance, JCIDS, as described in CJCSI 3170.01. The JCIDS process is integrated with the acquisition process and exists to identify, develop, and validate Defense-related operational requirements. JCIDS plays a key role in identifying the capabilities required by the warfighters to support National Military Strategy and the National Strategy for Homeland Defense. JCIDS integrates with the acquisition and the planning, programming, budgeting, and execution (PPBE) processes to support improvements to existing warfighting capabilities and development of new warfighting systems. The process validates warfighting capability needs while considering the full range of materiel and non-materiel solutions. Operational capabilities must be defined within the "art of the possible" and grounded within real world constraints of time, technology, and affordability. Within DoD there is a distinct separation between the requirements, programming, and acquisition authorities, which requires early and continued collaboration between all communities in order for the processes to work effectively together.

1.3. Acquisition Category (ACAT) Levels. An acquisition category (potential level of investment) is assigned to all Defense Acquisition initiatives that involve the development and/or fielding of a materiel solution(s) necessary to mitigate an operational capability need. ACATs are described in DoDI 5000.02, *Operation of the Defense Acquisition System.* ACAT levels (ACAT I, IA, II, and III) determine the level of program oversight, aid decentralized decision making, and comply with Congressional and DoD direction. ACAT levels also provide the basis for determining the level of oversight, validation, and approval of operational capability requirements documents.

1.4. Drivers of Air Force Operational Capability Requirements. Figure 1.1 depicts various contributing elements that identify gaps and shortfalls in operational capabilities, and influence and define Air Force operational capability requirements.

Figure 1.1. Contributing Elements to Air Force Operational Capability Requirements.



1.4.1. Capabilities Planning. Capabilities planning involves forecasting under uncertainty to provide capabilities suitable for a wide range of challenges and circumstances, all designed to achieve certain operational environment effects. The Air Force uses a Service-wide capabilities-based planning process (the AF/A5X led Air Force's Capabilities Review & Risk Assessment [CRRA]) based on subjective, operational expertise and objective analysis to identify required capabilities and families of related capabilities, or capability objectives. CRRA results inform and support independent, mission-focused capabilities-based assessments (CBA) performed by Lead Commands. Refer to AFI 10-604, *Capabilities-Based Planning*, for details on Air Force capabilities planning.

1.4.1.1. Capabilities-Based Assessment (CBA). The CBA forms the analytic basis for operational capability requirements development and is an integral part of the capabilities planning process. The CBA defines the capability required and any capability gaps/shortfalls identified during the conduct of the assessment. The CBA consists of the following activities: analyzing what is required for the warfighter across all functional areas to accomplish the mission (defining the capability required), comparing the capability needs to the capabilities provided by any existing or planned systems (gap analysis), and identifying associated gaps/shortfalls and/or redundancies. The final step of the CBA is to offer recommendations on whether the gaps/shortfalls can be addressed by non-materiel means, materiel means, or both. Results of the CBA are documented in one of two documents; a Joint doctrine, organization, training, materiel, leadership and education, personnel, or facilities (DOTMLPF) Change Recommendation (DCR) or an Initial Capabilities Document (ICD). The Air Force capability portfolio manager (CPM) works with the sponsor to develop, balance, and prioritize CBA results within their respective portfolios. Additional details on the CBA are provided in the JS/J8 JCIDS Manual, the JS/J8 CBA User's Guide, and in the Air Force Materiel Command (AFMC)/Office of Aerospace Studies (OAS) CBA Handbook located at **http://www.oas.kirtland.af.mil/**.

1.4.2. Top-Down Direction. Higher authority may direct a sponsor to initiate the development and fielding of an operational system to a warfighter need . Written direction from the Chief of Staff of the United States Air Force (CSAF) or higher authority fulfills the AFPD 10-6 requirement for identifying a capability need. However, the designated sponsor is still responsible for conducting appropriate supporting analysis and producing the

necessary operational capability requirements documents to support development and/or fielding and sustainment of an operational system.

1.4.3. Combatant Commander Needs. A combatant commander's need may identify a capability gap/shortfall (perhaps identified in their integrated priority list (IPL)) that may be satisfied through two options: the normal acquisition process or the Rapid Response Process (RRP), as described in AFI 63-114, *Rapid Response Process*, and **Attachment 3**. Normal acquisition of combatant commander's needs will require a Service Component sponsor who is responsible for conducting appropriate supporting analysis and producing the necessary operational capability requirements documents.

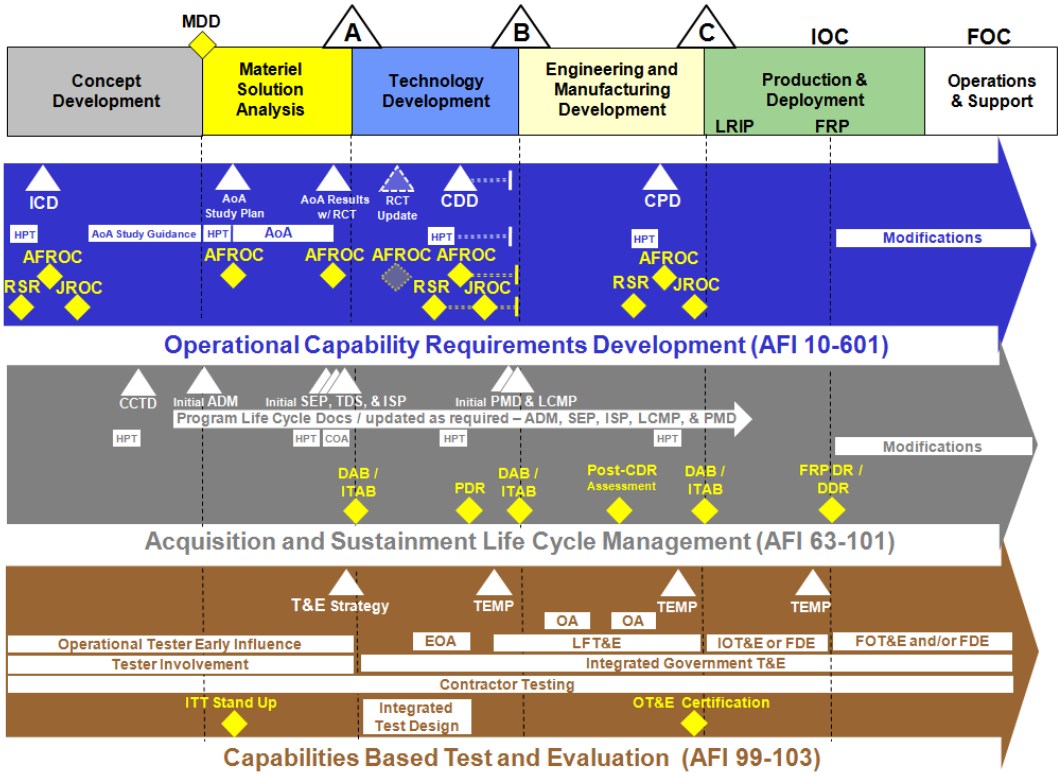
1.4.4. Technology Transition Activities. Technology transition plays a crucial role in providing warfighters with superior operational systems, built on mature and affordable technologies. Current sources for capitalizing on technology transition are advanced technology demonstrations (ATD), Joint capability technology demonstrations (JCTD), experiments, operational exercises, wargames, DoD and Air Force laboratory and research projects, and commercial sources identified within the Defense Science and Technology (S&T) Program. Evaluation results can lead to a sponsor developing an appropriate operational capability requirements document to facilitate technology transition.

1.4.5. Lessons Learned. A key method to achieve transformation of the Joint force is by producing compelling recommendations based on direct observations and sound analysis of current Joint operations, exercises and experiments. These recommendations (lessons) are derived from the full range of Joint activities and operations collected at the strategic, operational, and tactical level. Lessons assist senior leaders in making changes to DOTMLPF capabilities and guide associated programming, budgeting, and resourcing activities. To improve Joint capabilities and readiness, commanders may submit analytical observations directly to the Joint Lessons Learned Program (JLLP), as described in CJCSI 3150.25, *Joint Lessons Learned Program*, and/or to the Air Force Lessons Learned Program (AFL2P), as described in AFI 90-1601, *Air Force Lessons Learned Program*.

1.5. Implementation. Air Force requirements are driven by desired effects and needed capabilities. All stakeholders in the acquisition framework must know why the Air Force needs a particular capability, how and where it will be used, who will use it, when it is needed, and how it will be supported and maintained. For a materiel solution, fielding an operational system starts with sound strategies for concept refinement, requirements development, acquisition and sustainment life cycle management, and test and evaluation (T&E). To be viable, these strategies must be developed in concert and require early and ongoing collaboration among operators, developers, programmers, systems engineers, acquirers, testers, sustainers, and intelligence analysts. No one strategy can stand alone and still be viable, since all are interdependent and require the integration of the others to be effective. Expanding upon the collaborative effort, there are three mutually supporting Air Force processes that facilitate the development and sustainment of operational systems: operational capability requirements development as described in this instruction; operational capability acquisition and sustainment as described in AFI 63-101, *Acquisition and Sustainment Life Cycle Management;* and integrated operational testing as described in AFI 99-103, *Capabilities-Based Test and Evaluation*. These processes are interdependent and require collaboration to rapidly deliver new operational systems to the warfighter. The three communities must use the guidance in all three instructions to integrate their efforts and create synergy. Figure 1.2 depicts the integration of the three

processes in relation to the overarching DoDI 5000.02 acquisition framework. Initiative specifics (i.e., potential ACAT level, joint potential designator (JPD), etc.) will determine which steps are executed within each process.

Figure 1.2. Integration of Requirements, Acquisition, and Test and Evaluation Processes.



1.5.1. Acquisition and Sustainment Life Cycle Management. The primary goal of the acquisition system is to rapidly deliver affordable and sustainable operational systems that meet the warfighter's needs. To achieve this goal, all stakeholders must collaborate in planning and execution activities that lead to developing, fielding, and sustaining new operational systems. After required capabilities and performance attributes are defined and approved, they are used to guide development, test and evaluation, production, procurement, deployment, sustainment, and disposal of the new operational system. Working with the operator, the acquirer builds an acquisition strategy that balances cost, schedule, and performance (operations and sustainment) in response to approved operational capability requirements documents. The acquisition strategy and the requirements strategy must align. Typical strategies take one of two forms (evolutionary acquisition (EA) or single step) and should be integrated with the requirements strategy through early collaborative development planning. Refer to AFI 63-101, *Acquisition and Sustainment Life Cycle*, for additional details.

1.5.1.1. Evolutionary Acquisition (EA). EA is the DoD and AF preferred acquisition strategy for rapidly delivering needed capabilities to the warfighter based on the maturation of technologies. The success of the EA strategy depends on consistent and repeated validation of operational capability requirements, stated in increments of

increasing capability. The objective is to balance needs and potential capabilities with resources and to quickly put supportable operational systems into the hands of the operator. During all phases of EA, sustainment elements must be considered and included in acquisition planning in order to sustain the system cost effectively. Each capability increment may require a separate set of operational capability requirements documents.

1.5.1.2. Single Step to Full Capability. When an acquisition program can achieve operator capability requirements within a single increment, such as with highly mature technology and/or off-the-shelf solutions, the acquirer may opt for a single-step strategy.

1.5.2. Integrated Test and Evaluation (T&E). The overarching functions of T&E are to determine the operational capabilities and limitations of systems, to reduce risks, and to identify and help resolve deficiencies as early as possible. Integrated T&E combines developmental and operational test objectives to the maximum extent possible and provides assurance that systems will satisfy mission requirements in operational environments. Refer to AFI 99-103, *Capabilities-Based Test and Evaluation*, for additional details.

1.6. Space-Related Operational Capability Requirements Development.

1.6.1. Space-Related Operational Capability Requirements Development Policy. Space systems acquisitions are governed by DoDI 5000.02, and development of space-related operational capability requirements will follow guidance in CJCSI 3170.01. However, subtle differences in how space systems are developed and acquired necessitate some unique activities in operational capability requirements development. Space systems (e.g., satellites and boosters) are normally high-cost, small-quantity acquisitions purchased without the benefit of full-scale prototyping. Further, once launched, space assets do not lend themselves to major modification and upgrade. As such, developing the requisite operational requirements documentation requires additional rigor to ensure the system that is produced and launched provides the desired capability for the current increment.

1.6.2. Operational Capability Requirements Documents and Acquisition Milestones. Operational capability requirements documents for space-related programs are the same as any other program, but may undergo additional iterations. As with all programs, a Capability Development Document (CDD) is required prior to a MS B decision. However, additional refinement of system requirements during preliminary design and the subsequent engineering and manufacturing development phase may result in a second iteration of the CDD for Air Force Requirements Oversight Council (AFROC) validation and/or Joint Requirements Oversight Council (JROC) approval prior to MS C. This will precede development of the Capability Production Document (CPD), which will be the final requirements document prior to a build approval decision (analogous to the low-rate initial production (LRIP) decision for non-space production efforts).

1.7. Information Technology (IT) Requirements. The JROC recognizes IT initiatives are dynamic in nature, often supported by quickly emerging technologies. In recognition of this, CJCSI 3170.01 implements several approaches to developing IT requirements, each allowing for flexibility and providing the planning necessary to incorporate evolving technologies throughout the life cycle of the program. For additional information on IT operational capability requirements development, see CJCSI 3170.01 and the AF/A5RP requirements web site.

1.8. Operational Capability Requirements Development Training. There are two levels of operational requirements training: Office of the Secretary of Defense (OSD)/Joint Staff and Air Force.

1.8.1. OSD/Joint Training. The OSD/Joint-level Requirements Management Certification Training (RMCT) provides key operational requirements personnel an end-to-end perspective of operational capability requirements development, highlighting the intersection between acquisition, resources, and operational requirements. Training is provided by the Defense Acquisition University (DAU) and is congressionally mandated for all DoD personnel involved in operational capability requirements development, staffing, validation, and approval. Additional information on policy, classes, and certification responsibilities is located on the AF/A5RP Requirements web site.

1.8.2. Air Force Training. Air Force operational capability requirements training is designed for Major Command (MAJCOM), Field Operating Agency (FOA), Direct Reporting Unit (DRU), and Headquarters Air Force (HAF) action officers responsible for developing and/or reviewing operational capability requirements documents. Training focuses on Air Force implementation of the operational capability requirements development process and is hands-on, experienced-based classroom and one-on-one instruction taught around the country. The Air Force Institute of Technology (AFIT) and AF/A5R conduct Air Force training. Additional information on classes, schedules, and registration is located on the AF/A5RP Requirements web site.

Chapter 2

OVERVIEW: AIR FORCE OPERATIONAL CAPABILITY REQUIREMENTS

2.1. Purpose. This chapter details the Air Force operational capability requirements development process and provides guidance for Air Force requirements strategy, document preparation, validation, approval, and archiving. With the exception of the Joint DCR, operational capability requirements documents are developed to support acquisition activity for operational materiel solutions as depicted in **Figure 1.2** Within the Air Force, the Lead Command responsible for a capability or mission (referred to as the sponsor) normally develops requirements documents. In most cases, the sponsor, in coordination with the respective CPM, determines when a specific requirements document is needed. However, the Office of the Secretary of Defense (OSD), the Joint Staff, or the AFROC may also direct development of an operational capability requirements document. This tasking will be directed to the appropriate Air Force sponsor.

2.2. Operational Capability Requirements Documents. CJCSI 3170.01 directs the use of four types of documents for operational capability requirements: the Joint DOTMLPF Change Recommendation (DCR), the Initial Capabilities Document (ICD), the Capability Development Document (CDD), and the Capability Production Document (CPD). Refer to CJCSI 3170.01 for specific details on the use, content, and format of operational capability requirements documents.

2.2.1. Joint DOTMLPF Change Recommendation (DCR). In cases where a Joint non-materiel solution(s) is recommended, or a Joint non-materiel solution can be implemented independent of proposed materiel needs, a joint doctrine, training, materiel, leadership and education, personnel, or facilities change recommendation (Joint DCR) is produced. A Joint DCR may be developed based on analysis provided in a CBA, an ICD, or other sources, such as results of an experiment, lessons learned, etc. All Air Force-led Joint DCRs are validated by the AFROC prior to Functional Capabilities Board (FCB) submittal. The JROC is final approval authority for all Joint DCRs. Refer to CJCSI 3170.01 for specific guidance on Joint DCRs.

2.2.2. Initial Capabilities Document (ICD). In cases where an operational materiel solution is necessary, the operational capability requirements development process begins with the development of the ICD. An ICD articulates the requirement for a materiel solution (or in some cases, a materiel and non-materiel combination) to resolve a specific capability gap/shortfall or a set of capability gaps/shortfalls for a given timeframe identified as the result of a capabilities-based assessment (CBA). The follow-on to an ICD could be one or more CDDs. Refer to CJCSI 3170.01 for specific information on CBAs and ICDs.

2.2.3. Capability Development Document (CDD). A CDD captures the information necessary to develop a proposed program, normally using an evolutionary acquisition strategy. The CDD outlines an affordable increment(s) of militarily useful, logistically supportable, and technically mature capability. Refer to CJCSI 3170.01 for specific information on CDDs.

2.2.4. Capability Production Document (CPD). The CPD captures the information necessary to support production, testing, and deployment of an affordable and supportable increment within an acquisition strategy. Refer to CJCSI 3170.01 for specific information on CPDs.

2.3. Additional Approaches to Documenting Operational Capability Requirements. The Air Force has established two additional means to document operational capability requirements in support of specific operational acquisition activities. They are the initial requirements correlation table (RCT) contained in the analysis of alternatives (AoA) final report and the Air Force Form 1067.

2.3.1. Requirements Correlation Table (RCT). The RCT is a formatted summary of required operational characteristics, including threshold values for minimum performance characteristics, and if absolutely necessary, objective values, within the AoA final report, and CDD/CPD text. It assists operational and system requirements traceability and supports the development of follow-on requirements and acquisition documents. An initial RCT is created to summarize key capabilities that require further development during the Technology Development phase and is inserted into the AoA final report (see **paragraph 5.2.5**).

2.3.2. AF Form 1067 Modification Proposal. An AF Form 1067 documents the submission, review, and approval of requirements for modifications to fielded Air Force systems. Refer to **Chapter 8** for instruction and criteria on the development, coordination, and approval of an Air Force Form 1067. Refer to AFI 63-131, *Modification Program Management*, for additional guidance on the Air Force modification process.

2.4. Analysis of Alternatives (AoA). An AoA is an analytical comparison of proposed materiel solutions to gaps/shortfalls in operational capability, which helps in identifying the solution that best balances cost, effectiveness, and risk. AoAs provide comparative cost, effectiveness, and risk assessments of proposed alternatives against a baseline, typically the current operating system. Information regarding formats, timelines, and support is available in the Road to Materiel Development Decision (MDD) and AoA Handbooks on the AFMC/OAS web site located at **http://www.oas.kirtland.af.mil**.

2.5. Document Development, Coordination, and Approval. The following paragraphs describe the Air Force process for developing, coordinating, and approving operational capability requirements documents. This process complements, but does not replace, the JCIDS process established in CJCSI 3170.01.

2.5.1. Requirements Strategy Development. Effective and timely delivery of required capability is predicated on the Air Force operational capability requirements development process and based on the formulation and execution of a viable requirements strategy. The requirements strategy establishes the path necessary to develop a quality operational requirements document that is capable of guiding future capability development activities. Each strategy is tailored to the acquisition phase, and addresses strategy elements such as: Joint interoperability/Joint implications, evolutionary acquisition, funding, schedule, testing, sustainment, training, analysis, intelligence support, potential challenges and constraints, etc. The sponsor develops the requirements strategy in collaboration with Air Force operator, systems engineer, acquisition, test, intelligence, and logistics communities, as well as other appropriate stakeholders (e.g., CPM, combatant commanders, FCB Working Group, Partner Nations, other Services and Agencies).

2.5.2. Air Force Requirements Strategy Review (RSR). AF/A5R convenes an RSR to provide guidance and approval for a sponsor's requirements strategy prior to convening a high performance team (HPT). The RSR is mandatory for all Air Force-sponsored ICDs,

CDDs, CPDs, and Joint DCRs. During the RSR, AF/A5R reviews the requirements strategy; evaluates operator needs and required capabilities; examines all key performance parameters (KPPs) and, if necessary, select key system attributes (KSAs); ensures necessary involvement from Air Force organizations, agencies, OSD, Joint Staff and other Services; approves the HPT core team; and provides any necessary guidance to support the most effective acquisition approach. The RSR should occur at least 30 days before the HPT convenes, to allow for AF/A5R-directed requirements strategy changes. The RSR briefing is coordinated with an assigned AF/A5RP HPT facilitator and HAF subject matter expert (SME). After AF/A5R approval, AF/A5RP archives a copy of the RSR briefing and RSR minutes in the Information & Resource Support System (IRSS). RSR scheduling, membership, procedures, and briefing templates are located on the AF/A5RP Requirements web site.

2.5.3. Air Force Requirements Development High Performance Team (HPT). The sponsor-led, AF/A5R-facilitated HPT captures, articulates, and documents the operator's requirements in minimum time, while achieving stakeholder buy-in. Ideally, the HPT will consist of 7-11 core participants, which includes a lead (the sponsor, during a requirements development HPT), a facilitator, Air Force SMEs (i.e., operators, systems engineers, acquirers, testers, logisticians, intelligence support managers, etc.), government agencies and other Services (as required), and support team members (not physically present but available via phone or e-mail for reach back). The HPT accelerates the documentation process; improves the quality of the requirements document; and can provide an enduring forum for developing, fielding, and sustaining operational systems. The HPT lead maintains responsibility for the document throughout the review and approval process. An AF/A5RP-facilitated HPT must be used to develop an operational capability requirements document unless waived by AF/A5R at the RSR. HPT membership and staffing process information is located on the AF/A5RP web site.

2.5.4. Document Review. Following the HPT, the sponsor submits the document via IRSS for simultaneous O-6 level Air Force and Joint staffing, in accordance with **Attachment 2** of this instruction. Additional information can be found on the AF/A5RP Requirements web site.

2.5.5. Lead Command Submittal of Air Force Requirements Documents. Following document review, the sponsor submits the document for AFROC validation, accompanied by a transmittal letter signed by the MAJCOM/DRU/FOA Commander (CC) for potential ACAT I documents, Vice Commander (CV) for potential ACAT II documents, or Director of Requirements for potential ACAT III documents, signifying their approval, as illustrated in **Table 2.1** Additional information can be found on the AF/A5RP Requirements web site.

2.5.6. Document Validation. The validation phase is the formal review process of an operational capability requirements document to confirm capability needs and operational requirements. The validation authority for an Air Force operational capability requirements document is based on its JPD (JROC Interest, Joint Capabilities Board (JCB) Interest, Joint Integration, Joint Information or Independent), as illustrated in **Table 2.1** The JS/J8 Gatekeeper assigns the JPD for all ICDs, CDDs, CPDs, and Joint DCRs when the documents are entered into formal Joint Staff coordination. For specific information on JPD designations, see CJCSI 3170.01.

2.5.6.1. Air Force Validation. The AFROC reviews and provides Air Force validation for all Air Force-sponsored ICDs, CDDs, CPDs, and Joint DCRs. AFROC decisions and recommendations are documented in an AFROC Memorandum (AFROCM), approved and signed by the VCSAF (or designated representative). Additional information can be found on the AF/A5RP Requirements web site.

2.5.6.2. Joint Validation.

2.5.6.2.1. JCB Validation. The JCB validates all operational capability documents with a JPD of JCB Interest. JCB decisions and recommendations are documented on a JROC Memorandum (JROCM) signed by the JCB Chairman.

2.5.6.2.2. JROC Validation. The JROC validates all operational capability documents with a JPD of JROC Interest. The JROC may request any document, regardless of the assigned JPD, be briefed to the JROC when significant unresolved issues exist. JROC decisions and recommendations are documented on a JROCM signed by the JROC Chairman.

Table 2.1. Validation and Approval Authority.

	JROC Interest			JCB Interest		Joint Integration, Joint Information, & Independent	
	ACAT I	ACAT II	ACAT III	ACAT II	ACAT III	ACAT II	ACAT III
Lead Command Approval	CC	CV	Director of Requirements	CV	Director of Requirements	CV	Director of Requirements
Air Force Validation	AFROC	AFROC	AFROC	AFROC	AFROC	AFROC	AFROC
Joint Validation	JROC	JROC	JROC	JCB	JCB	—	—
Final Approval	JROC	JROC	JROC	JCB	JCB	VCSAF	VCSAF
AF Document Signature	CSAF	VCSAF	VCSAF	VCSAF	VCSAF	VCSAF	VCSAF

2.5.7. Document Approval. Approval confirms the validation process is complete and provides the official Joint or Air Force senior leadership sanction of the identified capability described in the document. The approval level and signature level is dependent upon the potential ACAT level and JPD, as illustrated in **Table 2.1**

2.5.7.1. JROC Interest Documents. Following AFROC validation (documented in a signed AFROCM), Air Force-sponsored JROC Interest documents will be staffed for FCB review. The JROC is the final validation and approval authority for all JROC Interest operational capability requirements documents. JROC approval is documented in a JROCM signed by the JROC Chairman. Once the document receives JROC approval, the document will be staffed by the assigned Headquarters, Air Force (HAF) SME to the appropriate Air Force authority for signature.

2.5.7.2. JCB Interest (ACAT II/III). Following AFROC validation (documented in a signed AFROCM), Air Force-sponsored JCB Interest documents will be staffed for FCB review. The JCB is the final validation and approval authority for all JCB Interest operational capability requirements documents. The assigned HAF SME will staff the

document to VCSAF (or designated representative) for signature following JCB approval.

2.5.7.3. Joint Integration, Joint Information or Independent (ACAT II/III). VCSAF (or designated representative) is the final approval authority. The assigned HAF SME will staff the document to VCSAF (or designated representative) for signature following AFROC validation.

2.6. Waiver Authority. AF/A5R is the waiver authority for the provisions in this instruction. Waiver requests shall contain compelling justification and must be submitted formally through AF/A5RP.

2.7. Air Force Requirements Repository. All Air Force-sponsored operational capability requirements documents and AoA/analysis results (up to Secret), regardless of ACAT or JPD, are posted in IRSS, an electronic staffing and repository tool for Air Force operational capability requirements. Additional information on IRSS is available on the AF/A5RP Requirements web site.

2.8. Joint Staff Requirements Document Publication and Archiving. All approved operational capability requirements documents (up to Secret), regardless of ACAT, JPD, or Service, are posted to the Knowledge Management/Decision Support (KM/DS) tool, a Joint electronic staffing and repository tool for operational capability requirements. To ensure accuracy between IRSS and KM/DS, AF/A5RP ensures copies of approved documents are archived in both repositories. KM/DS is on the Secret-level classified network at **https://jrockmds1.js.smil.mil/guestjrcz/gBase.homepage**

Chapter 3

ROLES AND RESPONSIBILITIES

3.1. Purpose. This chapter defines the authority, roles, and responsibilities for organizations involved with defining, developing, documenting, validating, approving, and managing Air Force operational capability requirements.

3.2. Authority. The Chairman of the Joint Chiefs of Staff (CJCS) is the chairman of the JROC, and, as such, is the requirements validation and approval authority for all JROC Interest programs. This responsibility has been delegated to the Vice Chairman of the Joint Chiefs of Staff (VCJCS). The Air Force Deputy Chief of Staff for Operations, Plans and Requirements (AF/A3/5) is responsible for Air Force operational capability requirements development. The oversight for the Air Force operational capability requirements development process and procedures has been delegated to the Director of Operational Capability Requirements (AF/A5R).

3.3. Roles and Responsibilities. The roles and responsibilities for organizations affecting the Air Force operational capability requirements development process are defined in subsequent paragraphs. This list is not exhaustive. Other organizations not specified in this document may provide expertise in certain situations to assist in the production of Air Force operational capability requirements documents.

3.3.1. Deputy Chief of Staff for Operations, Plans and Requirements (AF/A3/5):

3.3.1.1. Provides oversight for Air Force operational capability planning and requirements development processes and procedures. Delegates process authority to AF/A5X and AF/A5R, respectively.

3.3.1.2. Ensures Air Force doctrine guides operational capability requirements, policies, plans, programs, and strategies.

3.3.1.3. Provides core/support HPT members as appropriate for operational capability requirements document development.

3.3.2. **Directorate of Operational Capability Requirements (AF/A5R):**

3.3.2.1. Lead for AF/A3/5 on all Air Force operational capability requirements. Provides HAF subject matter expertise for validated/approved operational capability requirements resulting from capability gaps/shortfalls as identified by the capabilities planning process. Responsible for the standardization and quality of Air Force operational capability requirements processes and products.

3.3.2.2. Chairs the AFROC.

3.3.2.3. Prepares Vice Chief of Staff of the United States Air Force (VCSAF) for JROC meetings.

3.3.2.4. Provides Air Force JCB Chair, and normally Air Force Chairs for FCBs and action officers for FCB working groups in support of the JROC mission.

3.3.2.5. Facilitates and coordinates all Air Force ACAT I, JROC Interest, and JCB Interest programs through the JCIDS process once AFROCM is signed.

3.3.2.6. Tracks all associated Air Force JROCM action items.

3.3.2.7. Coordinates Air Force position for all JROCMs, regardless of Service or ACAT level, and prepares and staffs JROCM packages to the VCSAF for signature.

3.3.2.8. Coordinates with other HAF directorates to resolve requirements, acquisition, and programmatic issues for all programs, including special access programs (SAP).

3.3.2.9. Ensures other Services' requirements receive applicable Air Force functional review.

3.3.2.10. Coordinates with document sponsor in requirements strategy development.

3.3.2.11. Chairs RSR and approves all requirements strategies.

3.3.2.12. Exercises VCSAF tasking authority to instruct responsible organizations within the HAF, MAJCOMs, and Agencies to review and staff operational capability requirements documents and comment resolution matrices (CRM).

3.3.2.13. Facilitates the HPT process, approves HPT membership, and provides HPT lead and participant HPT orientation.

3.3.2.14. Reviews and facilitates staffing and coordination for all operational capability requirements documents.

3.3.2.15. Reviews capabilities analysis to ensure studies are operationally relevant.

3.3.3. **Directorate of Operational Planning, Policy, and Strategy (AF/A5X):**

3.3.3.1. Conducts Air Force operational capabilities planning activities, via the Capabilities Review and Risk Assessment (CRRA), to identify AF capability gaps/shortfalls and overlap, in accordance with AFI 10-604.

3.3.3.2. Presents CRRA findings to AFROC, recommends Lead Command sponsorship of individual findings, and tracks subsequent sponsor responses.

3.3.3.3. Develops and maintains Air Force Operational Concepts, aligned with the Joint Operations Concepts (JOpsC), describing capabilities required to support joint warfighting effects.

3.3.3.4. Supports future Air Force capabilities development through exploration of concepts and capabilities in wargames.

3.3.3.5. Provides support HPT members, as appropriate, for operational capability requirements document development.

3.3.3.6. Ensures Air Force Counter- chemical, biological, radiological, and nuclear (CBRN) concerns are appropriate and accurate in all Air Force and Joint operational capability documents.

3.3.4. **Under Secretary of the Air Force (SAF/US):**

3.3.4.1. When delegated, serves as the Air Force Service Acquisition Executive (SAE) for space programs.

3.3.4.2. Integrates the needs and requirements of the DoD Components into space plans and major space program requirements documents. Resolves issues with the DoD

components, then submits architectures and requirements to the JROC for validation. Adjudicates unresolved requirements and interoperability issues through the JROC. Provides space plans to the JROC for information.

3.3.4.3. Provides core/support HPT members as appropriate to ensure operational capability requirements documents reflect technical feasibility and conform with acquisition policies.

3.3.4.4. When delegated as the SAE for Space acquisition, certifies (with the implementing command) to SECAF space system requirements as described in the ACAT I and non-delegated ACAT II CDDs: 1) can be translated for evaluation in a source selection in a clear and unambiguous way; 2) are prioritized (if appropriate); and 3) are organized into feasible increments of capability. Certification occurs concurrent with presentation to the AFROC.

3.3.4.5. Prepares the annual National Security Space Plan in consultation with the heads of DoD components and the Deputy Director of National Intelligence for Management (DDNI/M).

3.3.5. **Assistant Secretary of the Air Force, Acquisition (SAF/AQ):**

3.3.5.1. Serves as the Air Force SAE for non-space programs and as the Air Force Senior Procurement Executive.

3.3.5.2. Leads, integrates, and sets acquisition policy, processes and programs across the Air Force to facilitate rapid delivery of intended capability, support and/or services to the operator.

3.3.5.3. Provides core/support HPT members as appropriate to ensure operational capability requirements documents conform to acquisition policies.

3.3.5.4. When delegated as the SAE for non-Space acquisition, certifies (with the implementing command) to SECAF non-Space system requirements as described in the ACAT I and non-delegated ACAT II CDDs: 1) can be translated for evaluation in a source selection in a clear and unambiguous way; 2) are prioritized (if appropriate); and 3) are organized into feasible increments of capability. Certification occurs concurrent with presentation to the AFROC.

3.3.5.5. Establishes a rapid response process to satisfy urgent and compelling operator needs, as described in AFI 63-114.

3.3.5.6. Oversees the Air Force modification process (see **Chapter 8** and AFI 63-131).

3.3.5.7. Ensures the acquisition community works collaboratively with the requirements community beginning with the CBA and continuing through development and review of materiel concepts, AoAs, courses of action (COA), ICDs, CDDs, CPDs, and Joint DCRs. See AFI 63-101, *Acquisition and Sustainment Life Cycle Management.*

3.3.5.8. Ensures all operational capability requirements documents are reviewed for technical sufficiency with respect to the systems engineering elements (e.g., operational safety, suitability, and effectiveness; environment, safety, and occupational health; human systems integration; maintenance/sustaining engineering; product and system integrity; and software engineering).

3.3.6. **Office of the Secretary of the Air Force, Warfighting Integration and Chief Information Officer (SAF/CIO A6):**

3.3.6.1. Advocates for and ensures all elements of the Net Ready-KPP (IAW CJCSI 6212.01) are properly addressed in operational capability requirements documents.

3.3.6.2. Responsible for developing policy and advocating for warfighter integration, in activities such as: ATDs, modeling and simulation efforts, experimentations, and exercises.

3.3.6.3. Ensures effective and efficient IT management as required by Congressional statutory and DoD regulatory requirements (e.g., the Clinger-Cohen Act and DoD 5000 series).

3.3.6.4. Serves as Air Force lead for cyber-space operations policies, program oversight and resource allocation recommendations.

3.3.6.5. Provides core/support HPT members, as appropriate, for operational capability requirements document development.

3.3.7. **Deputy Chief of Staff for Intelligence, Surveillance and Reconnaissance (AF/A2):**

3.3.7.1. Provides Air Force policy guidance on intelligence issues associated with force modernization-associated programs, activities, or initiatives in accordance with AFI 14-111, *Intelligence in Force Modernization*.

3.3.7.2. Ensures all operational capability requirements documents are reviewed for accurate assessment of threat and documentation of intelligence supportability and infrastructure requirements; includes responsibility to ensure asymmetric threat environment pertinent to mandatory survivability and force protection KPPs is properly defined.

3.3.7.3. Manages Air Force Intelligence Requirements Certification process IAW CJCSI 3170.01, CJCSI 3312.01 and CJCSI 6212.01. Reviews, validates, and forwards requests for Joint Military Intelligence Requirements Certification to the JS/J2.

3.3.7.4. Provides core/support HPT members as appropriate for operational capability requirements document development.

3.3.7.5. Identifies Intelligence, Surveillance, and Reconnaissance (ISR) needs and gaps across air, space, and cyberspace mission areas and supports development of proposed operational solutions.

3.3.7.6. Guides Air Force mid and long-range ISR operational capability and requirements development and leads end-to-end capability portfolio management activities.

3.3.8. **Deputy Chief of Staff, Logistics, Installations & Mission Support (AF/A4/7):**

3.3.8.1. Ensures operational capability requirements documents contain executable supportability and life cycle sustainment strategies and requirements for effective operational logistics support.

3.3.8.2. Participates in operational requirements strategy development and ensures logistics issues are addressed to provide for long-term viability of the operational system,

system availability requirements, a reduced logistics footprint, optimizing Air Force enterprise sustainment capabilities, and Air Force control of the System product support.

3.3.8.3. Ensures Air Force CBRN defense concerns are appropriate and accurate in all Air Force and Joint Requirements Office (JRO) operational capability requirements documents.

3.3.8.4. Ensures ground-centric force protection Air Force base operational capability requirements are properly vetted through the Air Force Security Forces Center Requirements Working Group.

3.3.8.5. Provides core/support HPT members as appropriate for operational capability requirements document development.

3.3.9. **Deputy Chief of Staff, Strategic Plans & Programs (AF/A8):**

3.3.9.1. Provides strategic planning and programming guidance in accordance with SECAF and CSAF approved priorities identified in Air Force strategic guidance documents (e.g., Air Force Vision, Air Force Strategic Plan, and the Annual Planning and Programming Guidance (APPG)).

3.3.9.2. Ensures the Air Force Program Objective Memorandum (POM) balances Air Force leadership priorities and requirements with fiscal reality.

3.3.9.3. In coordination with AF/A9, ensures AF capabilities and requirements are accurately represented in the Analytic Agenda and Joint/OSD Guidance for DPPG directed studies.

3.3.9.4. Ensures capabilities planning results are considered and integrated across the overall USAF strategic planning process, future warfighting concepts, joint and OSD planning and analysis process, and POM development process.

3.3.10. **Studies & Analyses, Assessments and Lessons Learned (AF/A9):**

3.3.10.1. Leads USAF analytic policy development and implementation with regard to analytic processes and methodologies necessary to support operational capability requirements development.

3.3.10.2. Advocates for analytical (including M&S) resources and provides technical advice, guidance, and recommendations on Air Force analysis-related modeling and simulation issues to ensure analysis supporting operational capability requirements is defendable.

3.3.10.3. Guides MAJCOM, FOA, DRU, and Air Force support activities in structuring analyses to support solutions and alternatives, and operational capability requirements development analytic activities.

3.3.10.4. Provides insights to operational capability requirements development through oversight of the centralized integration and coordination of studies and analyses among all Air Force analytic providers.

3.3.10.5. Executive Agent for oversight of the Air Force Lessons Learned Program (AFL2P).

3.3.11. Assistant Chief of Staff for Strategic Deterrence and Nuclear Integration (AF/A10):

3.3.11.1. Serves as HAF lead for the nuclear enterprise to oversee and ensure uniformity of all nuclear capabilities requirements and nuclear related support requirements.

3.3.11.2. Advocates and reviews all Air Force nuclear operational capability requirements that may result in Research, Development, Test and Evaluation (RDT&E) and procurement appropriations. Provides HAF subject matter expertise for approved/validated nuclear capability needs resulting from capability gaps/shortfalls identified by the capabilities planning process.

3.3.11.3. Provides core/support HPT members, as appropriate, for nuclear operational capability requirements document development.

3.3.11.4. Ensures all nuclear capabilities requirements documents are reviewed for accurate assessment of supportability and infrastructure requirements.

3.3.11.5. Maintains direct liaison with AFMC Nuclear Weapons Center regarding warhead/weapon requirements.

3.3.11.6. Partners with the Department of Energy (DOE), the National Nuclear Security Administration, the various National Laboratories, and other agencies to ensure Air Force requirements are understood, and harmonizes DoD/DOE requirements processes.

3.3.12. **Directorate of Test & Evaluation (AF/TE):**

3.3.12.1. Functions as chief T&E advisor to Air Force leadership.

3.3.12.2. Supports development of operational capability requirements documents and ensures appropriate (direct and/or designated) participation in HPTs to ensure operational capability requirements are clearly stated and testable.

3.3.12.3. Supports the operational, acquisition, and sustainment communities' efforts to acquire and maintain operationally effective, suitable, and survivable systems.

3.3.12.4. Provides sponsors with information needed to develop new doctrine and requirements, enabling concepts, operating concepts, concept of operations (CONOPS), and refine tactics, techniques, and procedures.

3.3.12.5. Provides feedback on test results of developmental programs to SAF/AQ, SAF/US, and AF/A3/5 staff.

3.3.13. Air Education and Training Command (AETC):

3.3.13.1. Coordinates on all Air Force operational capability requirements documents and other Service requirements documents with Air Force training implications.

3.3.13.2. Provides core/support HPT members as appropriate for operational capability requirements document development.

3.3.14. **Air Force Operational Test and Evaluation Center (AFOTEC):**

3.3.14.1. Manages and conducts Air Force Operational Test and Evaluation (OT&E) in accordance with AFI 99-103.

3.3.14.2. Supports analysis and planning processes as requested to understand current and future operational needs.

3.3.14.3. Provides core/support HPT members as appropriate for operational capability requirements document development.

3.3.14.4. Reviews all operational capability requirements documents and enabling or operating concepts for OT&E issues.

3.3.14.5. For programs where AFOTEC is the lead operational test agency, AFOTEC/CC certifies requirements in the CDD and CPD are testable and measurable in conjunction with the AFROC.

3.3.14.6. Participates in AoAs, concept decisions and studies, the development of technology development strategies (TDS), T&E strategies, and COA selections as necessary.

3.3.14.7. Uses, but is not limited to, operational capability requirements documents and AoAs as a basis for planning, conducting, and reporting the OT&E and assessing operational impacts of systems.

3.3.15. **Lead Command/FOA/DRU:**

3.3.15.1. Sponsors operational capability requirements documents.

3.3.15.2. Develops requirements strategy and presents to AF/A5R for approval.

3.3.15.3. Conducts analyses to support Air Force and Joint requirements, to include CBA, DOTMLPF analysis, and AoAs.

3.3.15.4. Participates in HPTs (as lead, and/or core and support member as necessary) for operational capability document development, and provides consultation to AF/A5R on HPT lead and participant determination.

3.3.15.5. Provides a focal point to facilitate command-wide review of operational capability requirements documents.

3.3.15.6. Ensures weapon systems are developed in compliance with US Arms Control Treaty obligations.

3.3.15.7. Builds and documents the architecture, enabling concepts, operating concepts, and M&S required for the capability's acquisition, operations, test, training, and sustainment.

3.3.15.8. For intelligence-sensitive programs/initiatives, coordinates with the supporting intelligence representatives to assess the extent of intelligence infrastructure support that is required for the capability to be fully fielded and sustained (IAW AFI 14-111 and AFI 14-205, *Geospatial Information & Services (GI&S)*).

3.3.15.9. Ensures systems engineering considerations (i.e., including, but not limited to operational safety, suitability, and effectiveness; environmental, safety, and occupational health; human systems integration; maintenance/sustaining engineering; product and system integrity; and software engineering) are addressed in all ICDs, CDDs and CPDs, as appropriate.

3.3.15.10. Ensures life cycle sustainment requirements are addressed in all operational capability requirements documents.

3.3.15.11. Based on potential ACAT level and consulting with AFMC/OAS, develops AoA study guidance for approval and presentation to the Milestone Decision Authority (MDA) at MDD. For specific ACAT level AoA requirements, see AFI 63-101, Acquisition and Sustainment Life Cycle Management.

3.3.15.12. Assists implementing command by coordinating on system requirements documents, acquisition strategies, and requests for proposals prior to relevant contracting actions.

3.3.15.13. Ensures requests for acquisition resources, in support of pre-MDD planning efforts for which there is no established program, are submitted to the single point of entry, HQ AFMC/A5C (for non-space efforts) and HQ AFSPC/A5X (for space efforts).

3.3.15.14. Notifies AF/A5R prior to submittal of an AF response to the JROC regarding 10% Tripwire briefs and Nunn-McCurdy Breach presentations.

3.3.16. **Operating Command:**

3.3.16.1. Provides a focal point to facilitate command-wide review of operational capability requirements documents.

3.3.16.2. Provides core/support HPT members as appropriate for operational capability requirements document development.

3.3.16.3. Provides stakeholder inputs to the HPT lead and supports the briefings required at the RSR, AFROC, FCB, JCB, and JROC.

3.3.17. **Implementing Command (Air Force Materiel Command (AFMC) and/or Air Force Space Command (AFSPC)):**

3.3.17.1. Provides core and support HPT members as appropriate for operational capability requirements document development.

3.3.17.2. Assists the Lead Command in developing and preparing AoAs and performing or contracting for concept studies funded by requesters. Provides relevant information about prospective materiel solutions (e.g., the Concept Characterization and Technical Description (CCTD)) to the Lead Command and SAF/AQR in support of MDD and AoAs.

3.3.17.3. Supports and briefs program management aspects at RSR, AFROC, FCB, JCB and JROC, as appropriate.

3.3.17.4. Provides assistance and guidance for system and enterprise level sustainment planning and execution.

3.3.17.5. With the SAE, certifies to SECAF space and non-space system requirements as described in ACAT I and non-delegated ACAT II CDDs: 1) can be translated for evaluation in a source selection in a clear and unambiguous way; 2) are prioritized (if appropriate); and 3) are organized into feasible increments of capability. Certification occurs concurrent with presentation to the AFROC.

3.3.17.6. Attests to the requirements as described in the CDD for delegated ACAT II and ACAT III programs and CPDs as feasible. The attestation occurs concurrent with presentation to the AFROC.

3.3.17.7. Supports the SAE, CSAF, and Lead Command Commander by monitoring and controlling requirements baselines from MS A to fielding.

3.3.17.8. Assists Air Force acquisition program offices with intelligence-sensitive programs in defining, documenting and resolving relevant threat, intelligence supportability and infrastructure requirements to support operational system development, test & evaluation and acquisition (IAW AFI 14-111, *Intelligence in Force Modernization*, and AFI 14-205, *Geospatial Information & Services (GI&S)*).

3.3.17.9. Functions as the single point of entry (HQ AFMC/A5C for non-space and AFSPC/A5X for space) for receiving, evaluating, and responding to all requests for acquisition resources in support of pre-MDD planning efforts for which there is no established program.

3.3.18. **Air Reserve Components (Air National Guard and Force Reserve Command):**

3.3.18.1. Sponsors operational capability requirements documents for capabilities needed to accomplish assigned missions.

3.3.18.2. Develops and conducts analyses to support Air Force and Joint requirements.

3.3.18.3. Provides core/support HPT members as appropriate for operational capability requirements document development.

3.3.18.4. Provides a focal point to coordinate operational capability requirements documents with appropriate commands/agencies during document development and resolution of comments.

3.3.18.5. AF/REXPR works in concert with AF/A5R and is the Air Force Reserve office of primary responsibility for operational capability requirements at the HAF level.

3.3.18.6. NGB/A5R works in concert with AF/A5R as the ANG office of primary responsibility for operational capability requirements at the HAF level.

3.3.19. **Air Force Materiel Command/Office of Aerospace Studies (AFMC/OAS):**

3.3.19.1. Assists Lead Command and field agencies with the development of Air Force study guidance for CBAs, pre-MDD analyses and AoAs to ensure quality, consistency, and value. Provides procedural guidance for CBAs, DOTMLPF analyses, characterization/identification of initial materiel concepts, and AoAs and provides assistance to the study director and team in the planning, conduct, and presentation of these analyses.

3.3.19.2. Provides reviews and assessments on Air Force and Air Force-led CBAs, pre-MDD analyses, and AoAs prior to AFROC review.

3.3.19.3. Provides reviews and assessments on analyses/studies where Air Force has critical interest but may not be lead Service, as requested by appropriate HAF representatives.

3.3.20. **Air Force Cost Analysis Agency (AFCAA):**

3.3.20.1. Assists SAF/FMC in the assessment/review of cost estimates for major defense acquisition programs (MDAP), major automated information systems (MAIS), and pre-MDAP/MAIS (defined as programs expected to exceed MDAP/MAIS thresholds).

3.3.20.2. Provides guidance and policy for Air Force costing, and assists with the cost development process as the independent cost agency. Responsible for the development of the independent Component Cost Analysis (CCA). Supports implementing commands and SAF/AQ with development of cost estimates for materiel concepts.

3.3.20.3. Supports AoA study teams by providing Air Force cost guidance and participating in AoA efforts, including meetings, interim progress reviews and final reviews, cost estimation and sufficiency reviews.

3.3.20.4. Provides rough order of magnitude (ROM) costs.

3.3.21. **The Air Force Center for Systems Engineering (AF CSE):**

3.3.21.1. Supports development and review of technical documents required to support operational capability requirements development.

3.3.21.2. Develops and provides models, tools, and infrastructure to support enterprise-wide technical requirements development.

3.4. Capability Portfolio Managers (CPM). Air Force CPMs advise the CSAF and SECAF on optimizing and prioritizing capability investments (both materiel and non-materiel) across the service enterprise and reducing risk in meeting the Service's capability needs in support of strategy. To ensure consistency with Joint portfolio management, each portfolio is aligned with the current Joint Capability Areas. The CPM represents portfolio equities through the requirements process, the PPBE process, and the acquisition process, to ensure consistency with strategic direction and capability requirements. Specific CPM roles with respect to the AFROC are defined in the AFROC Charter.

3.5. Air Force Requirements Oversight Council (AFROC). The AFROC is an instrument of the CSAF. The AFROC is chaired by AF/A5R and is composed of flag officer level voting principals from designated MAJCOM, FOA, DRU, and HAF organizations. In addition, AFROC membership includes several advisory functions to assist principals in their decision-making processes. AFROC membership and functions are outlined in the AFROC Charter on the AF/A5RP Requirements web site.

3.5.1. The AFROC will:

3.5.1.1. Review and validate Air Force operational requirements prioritization.

3.5.1.2. Evaluate alternatives to acquisition programs to meet operational requirements.

3.5.1.3. Consider the fiscal framework necessary to make requirements affordable within projected fiscal guidance.

3.5.1.4. Review, validate, and recommend approval of the following Air Force operational capability requirements documents: ICD, CDD, CPD, and Joint DCR.

3.5.1.5. Validate Air Force-developed AoA study plans and final reports.

3.5.1.6. Provide Air Force validation of RCTs developed to support technology development phase activities.

3.5.1.7. Record decisions and recommendations of the AFROC through signed AFROC memoranda (AFROCM).

3.5.1.8. Ensure operational capability requirements documentation is prepared in accordance with Air Force and Joint Staff guidance.

3.5.2. AFROC Special Session. The AFROC Special Session reviews and validates all Air Force operational capability requirements having a classification level higher than Secret.

3.6. Functional Capabilities Boards (FCB). Joint Staff FCBs are established according to functional areas to assist the JCB and JROC. The JROC determines which specific area(s) are assigned to each FCB and the lead organization(s) responsible for sponsoring the FCB. FCBs and FCB working groups provide the analytical underpinning for developing and refining issues that support JROC recommendations. This includes participating in strategy and planning development, programming and resourcing activities, and a variety of feedback avenues. AF/A5R works as the lead Air Force organization to ensure Air Force interests are represented throughout the JROC process. For additional information on FCBs, refer to CJCSI 3137.01, *The Functional Capabilities Board Process*, and CJCSI 3170.01.

3.7. Joint Capabilities Board (JCB). The JCB assists the JROC in carrying out its duties and responsibilities. The JCB reviews all and, if appropriate, endorses all operational capability requirements documents designated as JROC Interest prior to their submission to the JROC. The JCB reviews, validates, and approves operational capability requirements documents designated as JCB Interest. AF/A5R tracks and facilitates issues through the JCIDS process and prepares the Air Force principal for JCB participation. Guidance on the JCB is provided in CJCSI 5123.01, *Charter of the Joint Requirements Oversight Council*.

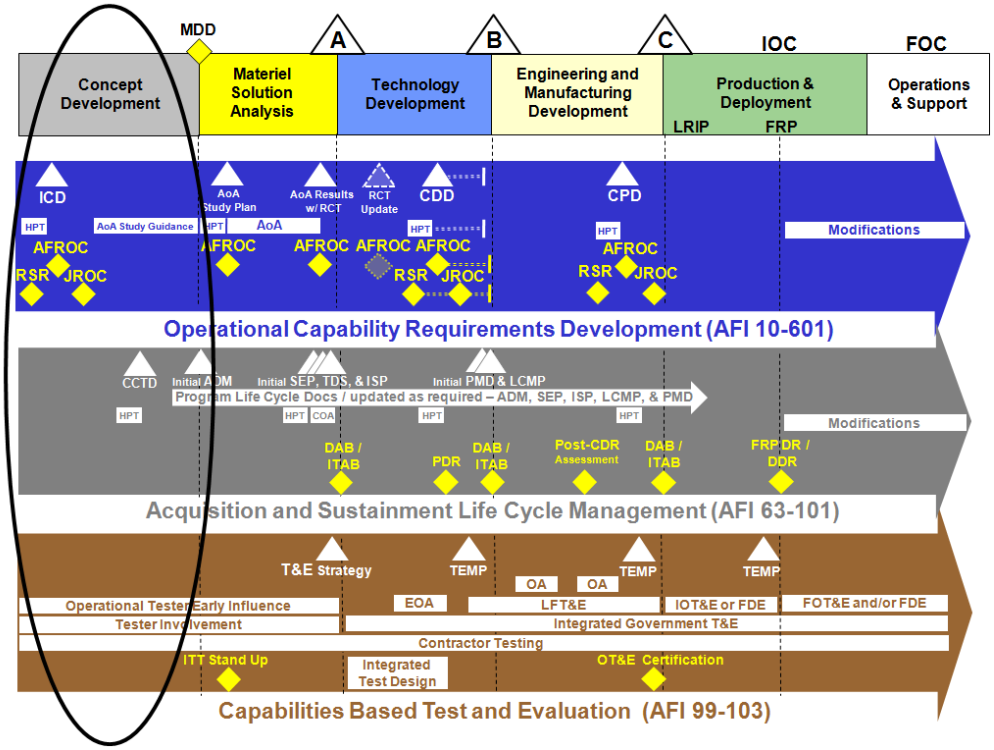
3.8. Joint Requirements Oversight Council (JROC). The JROC reviews, validates, and approves operational capability requirements documents designated as JROC Interest and supports the acquisition review process. The JROC, at its discretion, may review any operational capability requirements document or any other issues that may have Joint interests or impacts. AF/A5R tracks and facilitates issues through the JCIDS process and prepares the VCSAF for JROC participation. Guidance on the JROC is provided in CJCSI 5123.01.

Chapter 4

REQUIREMENTS ACTIVITIES TO SUPPORT MATERIEL DEVELOPMENT DECISION

4.1. Purpose. This chapter provides a high-level description of operational capability requirements development activities necessary to support a Materiel Development Decision (MDD) (**Figure 4.1**.). Operational capability requirements development begins with the ICD (either a newly developed ICD or an A5R-approved deficiency linkage to an existing ICD or urgent operational need (UON)). The ICD summarizes gaps/shortfalls identified during capabilities planning activities and provides rationale for a materiel solution. The ICD lays the foundation for subsequent concept development activities, the MDD, the Materiel Solution Analysis phase, the AoA, the initial milestone review (as identified at the MDD), and all subsequent phase activities. All potential acquisition programs must proceed through a MDD review, where the MDA will identify the initial milestone review (A, B, or C) and phase of entry into the acquisition process.

Figure 4.1. Activities to Support MDD.



4.2. ICD. The ICD documents the need for a materiel approach (or a combined materiel/non-materiel approach) to satisfy specific capability gaps/shortfalls. The ICD articulates the necessity to resolve a specific capability gap/shortfall (or gaps/shortfalls) for a given timeframe identified through a CBA performed during capabilities planning. The follow-on of an ICD could be one or more CDDs, CPDs, Joint DCRs, or a combination of these documents. Additional guidance on strategy development, RSRs, and HPTs is located on the AF/A5RP Requirements web site.

4.2.1. ICD Requirements Strategy Development. The sponsor develops the requirements strategy in collaboration with the appropriate Air Force CPM, operators, systems engineers, acquirers, testers, sustainers, and intelligence analysts. The strategy maps the details necessary for developing an ICD and describes the resources and communities necessary to support the process. Strategy development includes sponsor's interaction with the Joint Staff, other Services, and agencies. Continuous collaboration ensures the requirements strategy addresses required capabilities identified in applicable Joint and Air Force enabling & operating concepts, capabilities planning documents, and other pertinent guidance. In addition, consideration must be given to the focus and depth of analysis that will be needed to support the development of the ICD.

4.2.2. ICD Requirements Strategy Review (RSR). An RSR is mandatory for all Air Force-sponsored ICDs. AF/A5R chairs and approves the requirements strategy for ICD development at the RSR. Sponsors must ensure that all items on the RSR checklist (on the AF/A5RP Requirements web site) are complete and ready for presentation. An RSR is required prior to convening an HPT for an ICD and should occur at least 30 days before starting an HPT.

4.2.3. ICD HPT. Following strategy approval, an HPT is conducted to finalize the ICD and prepare it for formal staffing and validation at the AFROC. Ideally, core membership for an ICD HPT evolves from the CBA participant organizations, and must include representatives from the Lead Command, Operating Command, science and technology community, systems engineering community, HAF SMEs, representatives from other agencies/Services, combatant commands, and others as needed. Additional guidance for the preparation and execution of the ICD HPT is located on the AF/A5RP Requirements web site.

4.2.4. ICD Review and Approval. Following the HPT, the ICD is submitted for formal staffing in accordance with **Attachment 2**. Specific coordination guidance and timelines are located on the AF/A5RP Requirements web site.

4.2.5. ICD Validation. Upon completion of staffing, the document sponsor will present the ICD at the AFROC for Air Force validation. The level of review, validation, and approval beyond the AFROC is dependent upon the document's JPD (**Table 2.1**). Specific guidance is located on the AF/A5RP Requirements web site.

4.3. Post-ICD Activities. An approved ICD provides the sponsor and systems engineer personnel the appropriate scoping mechanism to conduct concept development and refinement activities. The collaborative effort initiated during ICD development supports early Systems Engineering (SE) activities and continues through the MDD and the AoA.

4.3.1. Early Systems Engineering (SE) Support. Early SE efforts (pre-MS A) scope the trade space associated with the gaps/shortfalls identified in the ICD, and establish appropriate boundaries to begin developing prospective materiel solutions. Analytical data (e.g., parametric study results, performance curves, etc.) generated during these activities populate the knowledge base for concepts being explored to mitigate the gaps/shortfalls. When applied in a rigorous and disciplined manner, robustly evolved concepts and their supporting data will permit higher-confidence estimates of cost, schedule, and technical performance, along with more comprehensive and integrated risk assessments, and will lead to better-informed decisions. Early SE activities are further described in AFI 63-1201, *Life Cycle Systems Engineering*, and AFI 63-101. Additional information regarding concept

development activities and the Road to MDD Handbook is available on the AFMC/OAS web site at **http://www.oas.kirtland.af.mil/**.

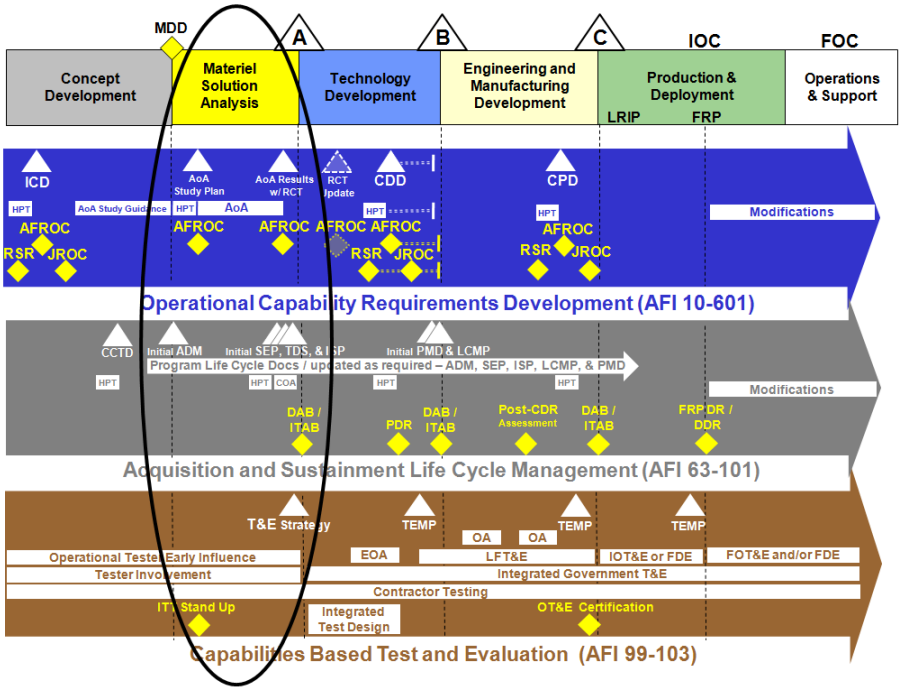
4.3.2. AF/A5R Notification. Document sponsors will notify AF/A5R prior to submitting a request to SAF/AQ for an MDD. Additional guidance on AF/A5R notification is located on the AF/A5RP Requirements web site.

Chapter 5

REQUIREMENTS ACTIVITIES TO SUPPORT MILESTONE A ACQUISITION DECISION

5.1. Purpose. This chapter provides a high-level description of operational capability requirements development activities necessary to support a MS A decision (**Figure 5.1**). The collaborative effort initiated during requirements strategy development continues throughout the Materiel Solution Analysis phase and directly supports the AoA and MS A.

Figure 5.1. Activities to Support Milestone A Acquisition Decision.



5.2. Analysis of Alternatives (AoA). An AoA occurs during the Materiel Solution Analysis phase and applies to all ACAT initiatives in accordance with DoDI 5000.02 and AFI 63-101 direction. The AoA is an analytical comparison of the operational effectiveness, suitability, risk, and life-cycle cost of alternatives that satisfy validated capability needs (usually stipulated in an approved ICD). The AoA must identify cost-effective alternative(s) and make a compelling statement about the capabilities and military worth that alternative(s) will provide. The AoA helps decision-makers select courses of action (COA) to satisfy an operational capability need, while providing the analytic basis for performance attributes documented in the RCT, CDD, and/or CPD. In short, the AoA must provide clear and unambiguous data, enabling senior Air Force leaders the ability to debate and assess a potential program's operational capability and affordability, and maximize investment. Consequently, AoA data has a great impact on the DoD PPBE process. All AoAs must be conducted IAW the MDD acquisition decision memorandum (ADM) and any additional guidance provided by appropriate requirements and acquisition authorities. Information regarding formats, timelines, and support is available in the Road to MDD and AoA Handbooks on the AFMC/OAS web site at **http://www.oas.kirtland.af.mil/**.

5.2.1. ACAT I and non-delegated ACAT II AoAs

5.2.1.1. Execution and Review. The sponsor is responsible for executing the AoA for a potential ACAT I or non-delegated ACAT II program with assistance from AFMC/OAS. The AoA study team evolves from the ICD HPT membership and includes AFMC/OAS, and others (as necessary). The OSD Office of the Director, Cost Assessment and Program Evaluation (D/CAPE) and Air Force Cost Analysis Agency (AFCAA) provide direction during early AoA planning activities and may participate on the AoA team. The AFROC reviews and validates the AoA study plan, AoA interim progress (if necessary), and AoA final report. Additional guidance is available in the AoA Handbook located on the AFMC/OAS web site.

5.2.1.2. Study Plan. The AoA study team develops a study plan of sufficient detail to address the issues established in the ADM and to ensure a rigorous analysis process. Sponsors will coordinate the study plan and proposed briefings with AFMC/OAS prior to presentation to the AFROC for validation. The HAF SME will staff a memorandum through AF/A5R to release the AFROC-validated AoA study plan to D/CAPE for approval prior to beginning the AoA study. Additional guidance is available in the AoA Handbook located on the AFMC/OAS web site.

5.2.1.3. Interim Progress. An interim progress briefing may be requested by AF/A5R, AFROC, or study sponsor. The most common reasons for interim progress briefings include: completion of initial alternative screening/down-selecting, changes to key assumptions and constraints; significant modification of the Mission Tasks and Measures of Effectiveness/Performance; or knowledge gained in the analysis to date that would impact requirements decisions.

5.2.1.4. Final Report. The AoA final report captures and presents the methodology and results of the analysis. The AoA findings outlined in the final report are further developed into COAs and support the development of an initial RCT for programs entering the Technology Development phase. The initial RCT will reside within the body of the AoA final report. After the final report has been prepared and coordinated with AoA stakeholders, sponsors will coordinate the final AoA report and AFROC briefing with AFMC/OAS prior to AFROC presentation for validation. After AFROC validation, the sponsor forwards the final report to the HAF SME who will staff the report through AF/A5R to the VCSAF for release to D/CAPE. AoA final reports must be provided to D/CAPE for sufficiency assessment at least 60 days before the acquisition board for the initial milestone review. Additional guidance is available in the AoA Handbook located on the AFMC/OAS web site.

5.2.1.5. AoA Sufficiency. In rare circumstances a sponsor may request use of existing analysis in lieu of a formal AoA to support capability enhancements to a fielded system, or in unique cases, initiation of a new program. The AFROC must validate the sufficiency of the analysis based upon the same criteria as if a formal AoA was conducted prior to moving forward with post-Milestone A activities (e.g., development of an RCT and/or release of a final request for proposal (RFP) to support any Technology Development phase activities; development of a CDD to support preliminary design activities; or development of a CPD to support Production and Deployment phase activities). The sponsor must coordinate the AoA sufficiency package and proposed

AFROC briefing with AFMC/OAS and appropriate HAF SME prior to submittal to AF/A5RP for AF/A5R review and AFROC validation. Upon validation, AF/A5R will determine if sufficiency requires VCSAF review prior to release to D/CAPE for review. Additional guidance is available in the AoA Handbook located on the AFMC/OAS web site.

5.2.2. Delegated ACAT II or ACAT III AoAs. The analytic rigor and scope of a delegated ACAT II or ACAT III AoA may be less than that of an ACAT I, but is ultimately determined by the guidance provided at the MDD.

5.2.2.1. Execution and Review. The sponsor is responsible for executing the AoA for a potential delegated ACAT II or ACAT III program with assistance from AFMC/OAS. The AoA study team builds upon the ICD HPT membership and includes others, as necessary. The AFROC reviews and provides validation of the AoA study plan, AoA interim progress (if necessary), and AoA final report. Additional guidance is available in the AoA Handbook located on the AFMC/OAS web site.

5.2.2.2. Study Plan. The AoA study team develops a study plan of sufficient detail to address the issues established in the ADM and to ensure a rigorous analysis process. Sponsors must coordinate the study plan and proposed briefings with AFMC/OAS prior to presentation to the AFROC for validation and release to the AoA study team lead. Additional guidance is available in the AoA Handbook located on the AFMC/OAS web site.

5.2.2.3. Final Report. The AoA final report captures and presents the methodology and results of the analysis. The AoA findings outlined in the final report are further developed into COAs and support the development of an initial RCT for programs entering the Technology Development phase. The initial RCT will reside within the body of the AoA final report. After final results have been prepared and coordinated with AoA stakeholders, sponsors will coordinate the proposed briefings and final report with AFMC/OAS prior to presentation to the AFROC for validation. AF/A5R will determine if final report requires VCSAF review prior to its submittal to the MDA and to AF/A5RP for archival in IRSS. Additional guidance is available in the AoA Handbook located on the AFMC/OAS web site.

5.2.2.4. AoA Sufficiency. In rare circumstances a sponsor may request use of existing analysis in lieu of a formal AoA to support capability enhancements to a fielded system, or in unique cases, initiation of a new program. AF/A5R must approve the analysis before it is presented at the MDD or is used to support any of the following: development of an RCT and/or release of a final request for proposal (RFP) to support any Technology Development phase activities; development of a CDD to support preliminary design activities; or development of a CPD to support Production and Deployment phase activities. AF/A5R approval is based on the same criteria as if a formal AoA was conducted. The sponsor must coordinate the AoA sufficiency package with the appropriate HAF SME prior to submittal to AF/A5RP for AF/A5R approval. In certain circumstances, AF/A5R may request AFMC/OAS review, AFROC validation, or both prior to approval. Additional guidance is available in the AoA Handbook located on the AFMC/OAS web site.

5.2.3. AoA to Support Milestone B or C. Before MS B or C, the MDA may require a new AoA, or an update to a previous AoA, to account for any factors that were omitted or may have changed during the preceding acquisition phase. Staffing of these AoAs to VCSAF and subsequently to OSD will be accomplished in the same manner as the original AoA study plan and AoA final report.

5.2.4. Initial Requirements Correlation Table (RCT). An initial RCT is created to summarize key capabilities that require further development during the Technology Development phase and is inserted into the AoA final report. The primary objectives of the RCT are to provide a concise summary of key capabilities to assist requirements traceability, to inform contracting activities to begin technology development efforts, and to help decision makers make informed conclusions and/or decisions. The initial RCT contains a minimal number of operational performance characteristics (KPPs and KSAs), directly linked to the gaps/shortfalls documented in the ICD(s) and is framed by Measures of Effectiveness (MOE), Measures of Performance (MOP), and concept of operations in the AoA. During the Technology Development phase, these performance characteristics become more clearly understood and refined. This initial RCT is not as comprehensive as the RCT resident in the CDD or CPD, but evolves as technology matures and is updated, if necessary, prior to competitive prototyping. The initial RCT, embedded with the final AoA results, must be validated by the AFROC prior to System Requirements Document (SRD) approval and/or release of a final request for proposal (RFP) to support any Technology Development phase activity. The RCT ultimately supports the development of follow-on SRDs, CDDs, CPDs, and acquisition program baselines (APB), and assists operational and system requirements traceability. Specific guidance on the initial RCT is located on the AF/A5RP Requirements web site.

5.2.4.1. RCT Format. The RCT captures the KPPs, KSAs, their threshold and objective values, and provides the rationale/analytical reference for the values (**Table 5.1**).

Table 5.1. RCT Format.

Para. #	JCA Tier 1/2	KPP / KSA	Technology Development Threshold	Technology Development Objective	Rationale & Analytical References
		KPP 1	Value	Value	
		KPP 2	Value	Value	
		KSA 1	Value	Value	

5.2.4.1.1. Paragraph #. Cite the paragraph number where the KPP/KSA is described in the AoA. Otherwise, insert "Not Applicable."

5.2.4.1.2. Joint Capability Area (JCA) Tier 1/2. Cite the primary Tier 1 JCA and primary Tier 2 JCA, if applicable.

5.2.4.1.3. KPP/KSA. Insert the operational performance characteristic for which the threshold and objective values are identified. This minimal set of KPPs/KSAs (ideally no more than two for each) will focus Technology Development phase efforts.

5.2.4.1.4. Technology Development Threshold. Insert the minimum acceptable technology development threshold value for the corresponding operational

performance characteristic below which utility of subject characteristic becomes questionable. The technology development threshold must be supported by analytical rigor that demonstrates its operational utility and the need for resource investment.

5.2.4.1.5. Technology Development Objective. Only when absolutely necessary, insert the desired technology development objective value for the corresponding operational performance characteristic above threshold value. The development objective value must be supported by analytical rigor that demonstrates its operational utility and the need for significant operational improvement over threshold value and the demand for additional resource investment.

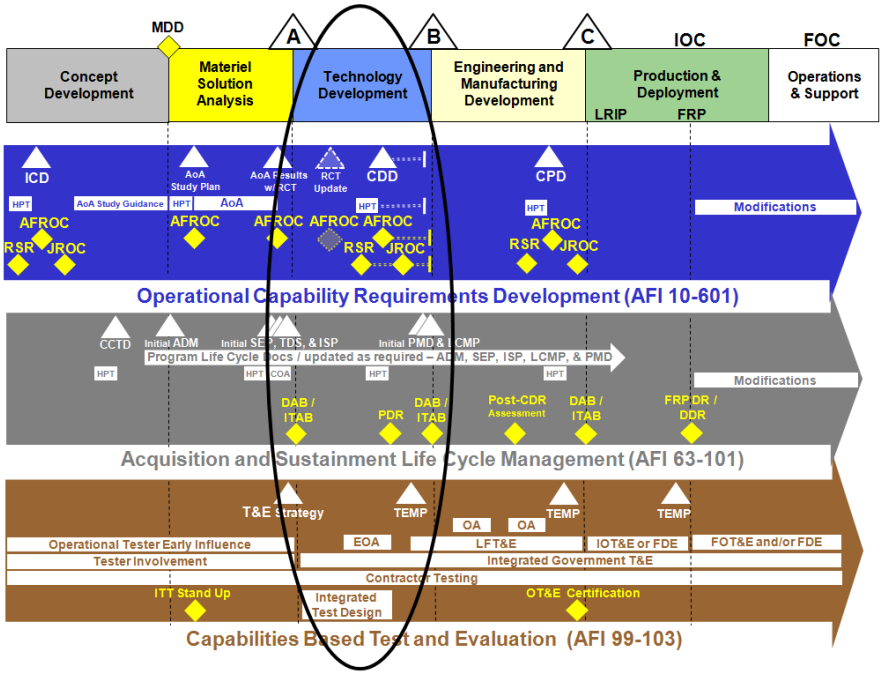
5.2.4.1.6. Rationale/Analytical References. Briefly summarize the rationale/analytical references of the subject KPPs/KSAs. Define the operational utility for both threshold and objective values. Reference the capability gap(s) in the ICD and identify the specific studies, analysis, threat assessments, modeling, or other reference sources (including informed military judgments) that justify and substantiate both values.

Chapter 6

REQUIREMENTS ACTIVITIES TO SUPPORT MILESTONE B ACQUISITION DECISION

6.1. Purpose. This chapter provides a high-level description of operational capability requirements development activities necessary to support a MS B decision (**Figure 6.1**). The RCT validated prior to MS A may require updating to support competitive prototyping activities, and to capture knowledge obtained during early technology development. The CDD is developed and approved in sufficient time to serve as basis for the definition of the system design requirements for the preliminary design review (PDR) and MS B. If needed, the CDD is updated prior to MS B.

Figure 6.1. Activities to Support Milestone B Acquisition Decision.



6.2. RCT Update. The sponsor and MDA may decide an update to the RCT is necessary to adequately support prototyping activities. The update will capture lessons learned from technology maturation and will identify additional and/or revised key requirements. The updated RCT must be validated by the AFROC prior to SRD approval and/or release of a final RFP to support competitive prototyping during Technology Development phase. Specific guidance on the RCT update is located on the AF/A5RP Requirements web site.

6.3. Capability Development Document (CDD). The CDD is a document that captures the information necessary to develop a proposed program, normally using an evolutionary acquisition strategy. A CDD outlines an affordable increment(s) of militarily useful, logistically supportable, and technically mature capability. The CDD contains a carefully selected minimum set of prioritized requirements (e.g., KPPs, KSAs, and additional attributes), understanding each requirement has potential to drive additional cost, schedule, and associated risks. A validated and approved CDD is required prior to PDR and the MS B, whichever occurs first. It provides

the operational KPPs, KSAs, and other attributes necessary to design and sustain the proposed system. It captures the evaluation of different materiel solutions and recommends the best approach to achieve the needed capability. It discusses the overall acquisition strategy, describes the current increment and provides an outline of the overall acquisition program strategy.

6.3.1. CDD Requirements Strategy Development. The sponsor develops the requirements strategy in collaboration with the appropriate Air Force CPM, operators, developers, systems engineers, acquirers, testers, sustainers, and intelligence analysts. The requirements strategy lays the foundation for CDD development and supports the Engineering and Manufacturing Development (EMD) phase for a single increment. During strategy development, the sponsor must interact with the Joint Staff, other Services, and agencies. For potential ACAT I programs, the sponsor continues collaborating with D/CAPE. The preferred materiel solution is based on analysis and mature technologies demonstrated prior to MS B. The sponsor applies lessons learned during the previous phases, plus any other appropriate risk reduction activities such as experimentation, T&E, and capability/schedule tradeoffs. Additional guidance on strategy development is located on the AF/A5RP Requirements web site.

6.3.2. CDD Requirements Strategy Review (RSR). An RSR is mandatory for all Air Force-sponsored CDDs. AF/A5R chairs and approves the requirements strategy for CDD development at the RSR. Sponsors must ensure that all items on the RSR checklist (on the AF/A5RP Requirements web site) are complete and ready for presentation. An RSR is required prior to convening an HPT for a CDD and should occur at least 30 days before starting an HPT.

6.3.3. CDD HPT. Following strategy approval, an HPT is conducted to finalize the CDD and prepare it for formal staffing and validation at the AFROC. Ideally, core membership for a CDD HPT evolves from the ICD HPT and AoA/RCT participant organizations, and must include representatives from the Lead Command, Operating Command, acquisition, logistics, and test communities, HAF SMEs, representatives from other agencies, Services, and others as needed. Additional guidance for the preparation and execution of the CDD HPT is located on the AF/A5RP Requirements web site.

6.3.4. CDD Review and Approval. Following the HPT, the CDD is submitted for formal staffing in accordance with Attachment 2. Specific coordination guidance and timelines are located on the AF/A5RP Requirements web site.

6.3.5. CDD Validation. Upon completion of staffing, the document sponsor will present the CDD at the AFROC for Air Force validation. The level of review, validation, and approval beyond the AFROC is dependent upon the document's JPD (**Table 2.1**). Specific guidance is located on the AF/A5RP Requirements web site.

6.4. CDD Guidelines.

6.4.1. Performance Attributes. The CDD provides performance and support-related attributes with threshold and, if necessary, objective values. The sponsor, in collaboration with the acquisition community, prioritizes requirements into three levels: KPPs, KSAs, and additional attributes. Performance attribute values apply only to the current increment or, in a single-step-to-full-capability approach, to the entire system. Follow guidelines and format as described in CJCSI 3170.01 and this AFI for CDD development.

6.5. CDD Requirements Correlation Table (RCT). The CDD RCT is a summary of all required capability characteristics listed as threshold and, if necessary, objective values within the CDD text. The RCT provides a concise summary to assist requirements traceability and support informed decision-making. Air Force CDD RCTs expand on the tables required by CJCSI 3170.01 by including "Paragraph Number" and "Rationale and Analytical References" columns.

6.5.1. CDD RCT Format. The RCT consists of three separate tables: "Key Performance Parameter" (**Table 6.1**), "Key System Attribute" (**Table 6.2**), and "Additional Attribute" (**Table 6.3**). All three tables have a similar format with the exception of the subject column (e.g., "KPP," "KSA," and "Additional Attribute"). The following information is required in each column for all three tables.

6.5.1.1. Paragraph Number. Cite the CDD paragraph where text for KPP/attribute is located.

6.5.1.2. Joint Capability Area (JCA) Tier 1/2. Cite the primary Tier 1 and 2 JCA (applicable to KPP and KSA tables only).

6.5.1.3. KPP/KSA/Additional Attributes. Insert the operational performance characteristic for which the threshold and objective values are identified.

6.5.1.4. Development Threshold. Insert the minimum acceptable threshold value for the corresponding operational performance characteristic below which utility of subject characteristic becomes questionable. The development threshold must be supported by analytical rigor that demonstrates its operational utility and the need for resource investment. The development threshold must be obtainable, measurable, and testable. If the development threshold value is planned to be achieved following completion of IOT&E, include a testable value to be achieved/demonstrated for evaluation during the IOT&E.

6.5.1.5. Development Objective. Only when absolutely necessary, insert the desired operational objective value for the corresponding operational performance characteristic above threshold value. The development objective value must be supported by analytical rigor that demonstrates its operational utility, the need for significant operational improvement over threshold value, and the demand for additional resource investment. The development objective must be obtainable, measurable, and testable.

6.5.1.6. Rationale/Analytical References. Briefly summarize (in 3 - 4 bullets) the rationale/analytical references of subject KPP/KSA/additional attributes as described within the text of the CDD. Identify the rationale for the operational utility and include the specific studies, analysis, threat assessments, modeling, or other reference sources (including informed military judgments) that justify and substantiate the threshold value, and if absolutely necessary, objective value.

Table 6.1. CDD KPP RCT Format.

Para. #	JCA Tier 1/2	Key Performance Parameter	Development Threshold	Development Objective	Rationale & Analytical References
		KPP 1	Value	Value	
		KPP 2	Value	Value	
		KPP 3	Value	Value	

Table 6.2. CDD KSA RCT Format.

Para. #	JCA Tier 1/2	Key System Attribute	Development Threshold	Development Objective	Rationale & Analytical References
		KSA 1	Value	Value	
		KSA 2	Value	Value	
		KSA 3	Value	Value	

Table 6.3. CDD Additional Attribute RCT Format.

Para. #	Attributes	Development Threshold	Development Objective	Rationale & Analytical References
	Attribute 1	Value	Value	
	Attribute 2	Value	Value	
	Attribute 3	Value	Value	

6.6. Changes to the CDD.

6.6.1. CDD Update. A need may arise to update an approved CDD in order to accurately document changes that have occurred before and/or during EMD. Prior to any CDD update, the sponsor must contact AF/A5RP and schedule an RSR to determine the Air Force level of review and approval authority. Proposed changes to KPPs, KSAs, and/or additional attributes must be accompanied by a funding strategy and schedule that have been coordinated with the appropriate program office. As a minimum, all changes to KPPs (regardless of ACAT) must be validated at the AFROC and agreed upon by CSAF (ACAT I) or VCSAF (ACAT II/III). Additional information on CDD updates is located on the AF/A5RP Requirements web site and CJCSI 3170.01.

6.6.1.1. JROC Interest CDDs. The JROC will approve any change to CDDs having a JPD of JROC Interest unless the JROC has specifically delegated approval authority to the Air Force. The AFROC must validate any change to a KPP prior to JROC submittal. For all other changes, AF/A5R will determine the level of Air Force review and/or validation prior to JROC submittal.

6.6.1.2. JCB Interest CDDs. The JCB will approve any change to CDDs having a JPD of JCB Interest unless the JCB has specifically delegated approval authority to the Air Force. The AFROC must validate any change to a KPP prior to JCB submittal. For all other changes, AF/A5R will determine the level of Air Force review and/or validation prior to JCB submittal.

6.6.1.3. Independent, Joint Information, and Joint Integration CDDs. The Air Force will approve any change to CDDs having a JPD of Independent, Joint Information, or Joint Integration (**Table 2.1**). The AFROC must validate any change to a KPP prior to Air

Force approval. For all non-KPP changes, AF/A5R will determine the level of Air Force review and/or validation prior to Air Force approval.

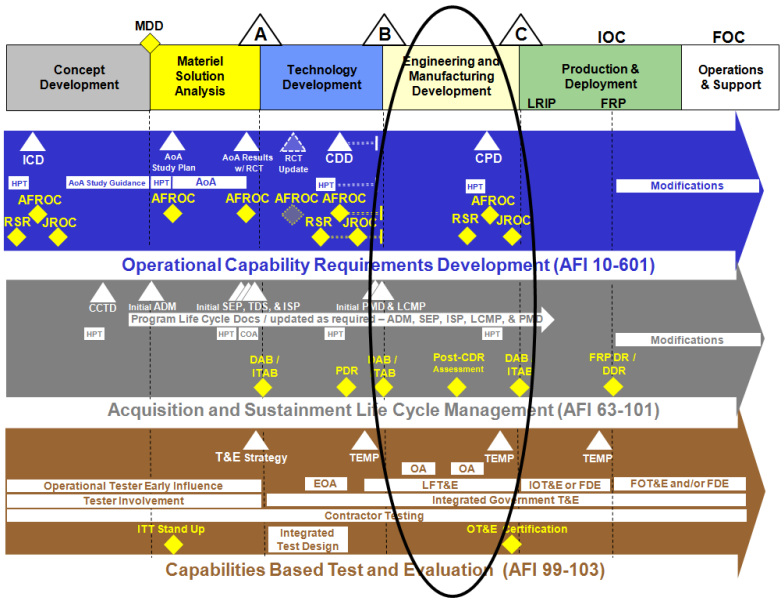
6.6.2. CDD Annex. A CDD annex is a separate document describing unique requirements for a variant of the core capability captured in the parent CDD. The annex is developed to add capability for a specific mission not covered within the CDD (for example, a special operations variant of a mobility aircraft). In addition to applicable mandatory KPPs, the CDD annex should identify a minimum of one performance KPP to describe the unique capability. All sections of the annex unchanged from the original CDD display the words "No Change" in that section. The original CDD accompanies the annex (as reference only) during document review. AF/A5R determines the level of review and approval authority required. Additional information on CDD updates is located on the AF/A5RP Requirements web site.

Chapter 7

REQUIREMENTS ACTIVITIES TO SUPPORT MILESTONE C ACQUISITION DECISION

7.1. Purpose. This chapter provides a high-level description of operational capability requirements process activities conducted to support a MS C acquisition decision (Figure 7.1). The CPD directly supports the Production & Deployment and Operations & Support phases. Results of the AoA, critical design review (CDR), APB, system demonstrations, and early test activity provide the basis for CPD development. An approved CPD is required for MS C.

Figure 7.1. Activities to Support Milestone C Acquisition Decision.



7.2. Capability Production Document (CPD). The CPD outlines an affordable increment of militarily useful, logistically supportable, and technically mature capability. The CPD contains a carefully selected minimum set of prioritized requirements (e.g., KPPs, KSAs, and additional attributes), understanding each requirement has potential to drive additional cost, schedule, and associated risks. A validated and approved CPD is required before each MS C. It provides the operational KPPs, KSAs, and other attributes necessary to produce and sustain the system.

7.2.1. CPD Requirements Strategy Development. The sponsor develops the requirements strategy in collaboration with the appropriate Air Force CPM, operators, acquirers, testers, sustainers, and intelligence analysts. The requirements strategy lays the foundation for CPD development and supports the Production and Deployment phase for a single increment. Strategy development includes sponsor's interaction with the Joint Staff, other Services, and agencies. The selected materiel solution is based on analysis and mature technologies demonstrated prior to MS C. The sponsor applies lessons learned during the previous phases plus any other appropriate risk reduction activities such as experimentation, T&E, and capability/schedule tradeoffs. Additional guidance on strategy development is located on the AF/A5RP Requirements web site.

7.2.2. CPD Requirements Strategy Review (RSR). An RSR is mandatory for all Air Force-sponsored CPDs. AF/A5R chairs and approves the requirements strategy for CPD development at the RSR. Sponsors should ensure that all items on the RSR checklist (on the AF/A5RP Requirements web site) are complete and ready for presentation. An RSR is required prior to convening an HPT for a CPD and should occur at least 30 days before starting an HPT.

7.2.3. CPD HPT. Following strategy approval, an HPT is conducted to finalize the CPD and prepare it for formal staffing and validation at the AFROC. Ideally, core membership for a CPD HPT evolves from the CDD HPT participant organizations and must include representatives from the Lead Command, Operating Command, acquisition, logistics, and test communities, HAF SMEs, representatives from other agencies, Services, and others as needed. Additional guidance for the preparation and execution of the CPD HPT is located on the AF/A5RP Requirements web site.

7.2.4. CPD Review and Approval. Following the HPT, the CPD is submitted for formal staffing in accordance with Attachment 2. Specific coordination guidance and timelines are located on the AF/A5RP Requirements web site.

7.2.5. CPD Validation. Upon completion of staffing, the document sponsor will present the CPD at the AFROC for Air Force validation. The level of review, validation, and approval beyond the AFROC depends on the document's JPD (**Table 2.1**). Specific guidance is located on the AF/A5RP Requirements web site.

7.3. CPD Guidelines.

7.3.1. Performance Attributes. The CPD provides performance and support-related attributes with threshold and, if necessary, objective values. The sponsor, in collaboration with the acquisition community, prioritizes requirements into three levels: KPPs, KSAs, and additional attributes. Performance attribute values apply only to the current increment or, in a single-step-to-full-capability approach, to the entire system. Follow guidelines and format as described in CJCSI 3170.01 and this AFI for CPD development.

7.4. CPD Requirements Correlation Table (RCT). The CPD RCT is a summary of all required capability characteristics listed as threshold and, if necessary, objective values within the CPD text. The primary objective of the RCT is to provide a concise summary to assist requirements traceability and support decision making. Air Force CPD RCTs expand on the tables required by CJCSI 3170.01 by including "Paragraph Number" and "Rationale and Analytical References" columns.

7.4.1. CPD RCT Format. The RCT consists of three separate tables: "Key Performance Parameter" (**Table 7.1**), "Key System Attribute" (**Table 7.2**), and "Additional Attribute" (**Table 7.3**). All three tables have a similar format with the exception of the subject column (e.g., "KPP," "KSA," and "Additional Attribute"). The following information is required in each column for all three tables.

7.4.1.1. Paragraph Number. Cite the CPD paragraph where text for KPP/attribute is located.

7.4.1.2. Joint Capability Area (JCA) Tier 1/2. Cite the primary Tier 1 and 2 JCA (applicable to KPP and KSA tables only).

7.4.1.3. KPP/KSA/Additional Attributes. Insert the operational performance characteristic for which the threshold and objective values are identified.

7.4.1.4. Production Threshold. Insert the minimum acceptable threshold value for the corresponding operational performance characteristic below which utility of the subject characteristic becomes questionable. The production threshold must be supported by analytical rigor that demonstrates its operational utility and the need for resource investment. The production threshold must be obtainable, measurable, and testable. If the production threshold value is planned to be achieved following completion of IOT&E, include a testable value to be achieved/ demonstrated for evaluation during the IOT&E.

7.4.1.5. Production Objective. Only when absolutely necessary, insert the desired operational objective value for the corresponding operational performance characteristic above threshold value. The production objective value must be supported by analytical rigor that demonstrates its operational utility, the need for significant operational improvement over threshold value, and the demand for additional resource investment. The production objective must be obtainable, measurable, and testable.

7.4.1.6. Rationale/Analytical References. Briefly summarize (in 3 - 4 bullets) the rationale/analytical references of subject KPP/KSA/additional attributes as described within the text of the CPD. Identify the rationale for the operational utility and include the specific studies, analysis, threat assessments, modeling, or other reference sources (including informed military judgments) that justify and substantiate the threshold, and if absolutely necessary, objective value.

Table 7.1. CPD KPP RCT Format.

Para. #	JCA Tier 1/2	Key Performance Parameter	Production Threshold	Production Objective	Rationale & Analytical References
		KPP 1	Value	Value	
		KPP 2	Value	Value	
		KPP 3	Value	Value	

Table 7.2. CPD KSA RCT Format.

Para. #	JCA Tier 1/2	Key System Attribute	Production Threshold	Production Objective	Rationale & Analytical References
		KSA 1	Value	Value	
		KSA 2	Value	Value	
		KSA 3	Value	Value	

Table 7.3. CPD Additional Attribute RCT Format.

Para. #	Attributes	Production Threshold	Production Objective	Rationale & Analytical References
	Attribute 1	Value	Value	
	Attribute 2	Value	Value	
	Attribute 3	Value	Value	

7.5. CDD in lieu of CPD. A sponsor may submit a CDD to be validated as a CPD in those cases where the CDD accurately reflects the performance of the system to be delivered at low-rate initial production, or at build decision for Space systems. When considering a CDD in lieu of CPD approach, the sponsor must first contact AF/A5RP regarding its feasibility and receive approval to proceed. If approved, an RSR must occur, HPT and O-6 staffing is waived (in most cases), and AFROC validation occurs prior to submitting the document to the lead FCB, if necessary.

7.6. Changes to the CPD. Unlike the CDD, the CPD is always specific to a single increment and is normally not updated. However, should a CPD update be required, the sponsor must contact AF/A5RP and, if agreed to, schedule an RSR to determine the Air Force level of review and approval authority. Proposed changes to KPPs, KSAs, and/or additional attributes must be accompanied by a funding strategy and schedule that have been coordinated with the appropriate program office. As a minimum, all changes to KPPs (regardless of ACAT) must be validated at the AFROC and agreed upon by CSAF (ACAT I) or VCSAF (ACAT II/III). Document preparation, format, review, validation, approval, and archiving of subsequent updates are normally the same as the original CPD.

7.6.1. JROC Interest CPDs. The JROC will approve any change to CPDs having a JPD of JROC Interest unless the JROC has specifically delegated approval authority to the Air Force. The AFROC must validate any change to a KPP prior to JROC submittal. For all other changes, AF/A5R will determine the level of Air Force review and/or validation prior to JROC submittal.

7.6.2. JCB Interest CPDs. The JCB will approve any change to CPDs having a JPD of JCB Interest unless the JCB has specifically delegated approval authority to the Air Force. The AFROC must validate any change to a KPP prior to JCB submittal. For all other changes, AF/A5R will determine the level of Air Force review and/or validation prior to JCB submittal.

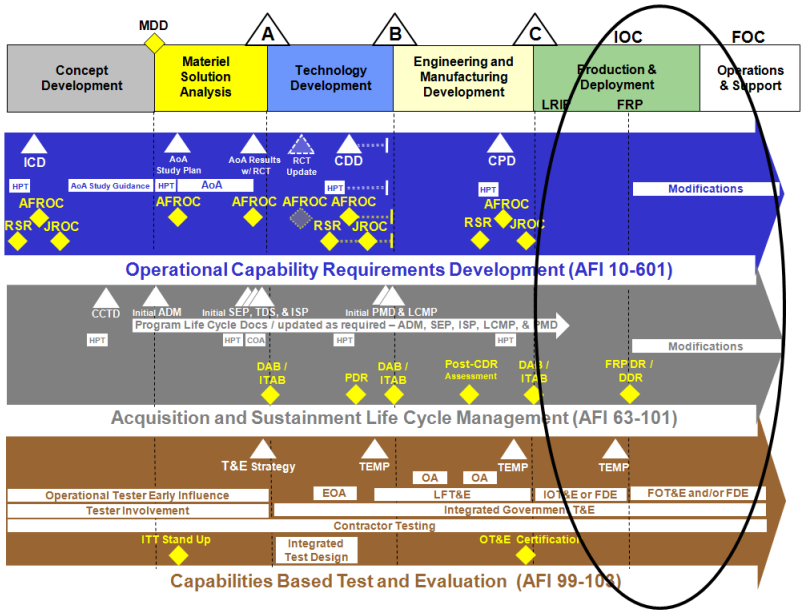
7.6.3. Independent, Joint Information, and Joint Integration CPDs. The Air Force will approve any change to CPDs having a JPD of Independent, Joint Information, or Joint Integration (**Table 2.1**). The AFROC must validate any change to a KPP prior to Air Force approval. For all non-KPP changes, AF/A5R will determine the level of Air Force review and/or validation prior to Air Force approval.

Chapter 8

REQUIREMENTS ACTIVITIES TO SUPPORT MODIFICATIONS

8.1. Purpose. This chapter provides a description of the operational capability requirements process activities conducted to support modifications (**Figure 8.1**). It outlines the requirements activities required to support the management of modifications for systems fielded and managed by the Air Force for systems.

Figure 8.1. Activities to Support Modifications.



8.2. Modifications. A modification is an alteration to a configuration item (CI) that, as a minimum, changes its form, fit, function, or interface. Modifications may be installed as permanent or temporary alterations, and they may be needed to add new capability to a fielded system or to sustain existing capability. A new ICD, CDD, CPD is not required to retain or restore capabilities of fielded systems that have an approved requirements/JCIDS document. For example, subsystems such as radar, avionics, self protection devices, etc., that have approved performance threshold/objective parameters but are no longer able to meet those parameters, can be updated or replaced to meet threshold/objective values under the authority of the approved requirements/JCIDS document. AFI 63-131 further defines and describes the modification process and provides guidance and procedures for managing modifications.

8.2.1. Temporary Modifications. Temporary modifications change the configuration of an item to enable short-term operational mission accomplishment, or to support test and evaluation of new and modified equipment. When the modification is no longer needed, as documented in the AF Form 1067, it is removed and the CI is returned to its permanent configuration. An approved AF Form 1067, *Modification Proposal*, can be used as the operational capability requirements documentation for a temporary modification to a system.

8.2.2. Permanent Modifications. Permanent modifications change the configuration of an asset to sustain or effect a lasting improvement in the operational effectiveness, suitability,

survivability, and/or ownership costs of a fielded weapon system, subsystem, or item. Permanent modifications are managed as acquisition programs and therefore must satisfy approved requirements.

8.2.2.1. Sustainment Modifications. Permanent sustainment modifications are used to retain or restore capabilities, or perform technology refresh of fielded systems. The Lead Command should prepare an AF Form 1067, in accordance with AFI 63-131, summarizing the modification, providing rationale, and documenting the program manager's engineering and cost assessment. An AF Form 1067 used in this manner conforms to previously approved requirements and provides configuration control, but does not establish any new requirements.

8.2.2.2. Capability Modifications. A permanent capability modification is predominantly implemented to satisfy an operational mission requirement by adding a new capability or function, or by enhancing technical performance or operational suitability of the asset. Capability modifications may also include efforts designed to improve the operational availability of the item or to reduce its ownership costs. A capability modification usually results in a change to the existing functional baseline or item performance specification for that CI. A capability modification may also remove components when an existing capability is no longer needed. Requirements for a capability modification are established either through a new operational capability requirements document or by an AF Form 1067.

8.3. AF Form 1067. An AF Form 1067, *Modification Proposal*, is used to document the submission, review, and approval of temporary modifications and permanent sustainment modifications regardless of cost. An AF Form 1067 can also be used to document the submission, review, and approval of requirements for permanent capability modifications estimated to cost no more than ten percent of the minimum threshold dollar values for ACAT II programs, as described in DoDI 5000.02, Enclosure 3. When estimated expenditures exceed ten percent of ACAT II minimum threshold dollar values ($14M RDT&E or $66M procurement funding in FY2000 constant dollars); an AF Form 1067 may not be used. In this case, the sponsor will prepare a new operational capability document unless proposed capability modification requirements were previously established in an approved CDD or CPD (see **Table 8.1**).

8.3.1. AF Form 1067 Approval. The Lead Command and program manager for a system must approve AF Forms 1067 for permanent or temporary modifications. Permanent modifications projected to cost in excess of $50M in FY 2000 constant dollars are approved by AF/A5R to ensure proper reprogramming actions are completed. In this case, the Lead Command requirements principal submits the completed AF Form 1067 to AF/A5R via a transmittal memo. AF/A5RP coordinates AF Forms 1067 (using established JCIDS timelines) with appropriate HAF organizations prior to AF/A5R review and approval.

8.4. Net-Ready (NR) KPP. The JS/J6 must approve permanent modifications that require interoperability and supportability certification (normally addressed as the NR-KPP in operational capability documents). For modifications that meet AF 1067 criteria, the sponsor prepares an AF Form 1067 while the program manager, with the sponsor's support, updates the system's information support plan (ISP). The program manager submits the updated ISP to

JS/J6 to obtain certification. The modification may not be installed until the interoperability and supportability certification is granted by JS/J6.

8.5. In-Production Systems. An AF Form 1067 is applicable only to items that have been delivered to the government under a DD Form 250, *Material Inspection and Receiving Report* . If some articles of the in-production system have been delivered and modifications to subsequent delivery articles are needed, a new or updated operational capability requirements document is not required unless the modification is driven by a change to the underlying requirement. If the modification will also be made to the previously delivered articles, an AF Form 1067 or operational capability requirements document, as appropriate, is used to record the modification of government owned items.

Table 8.1. Modification ($) Thresholds.

Modification Type	Modification ($) Amount	Requirements Document	Approval Authority
Temporary	Any	AF Form 1067	Sponsor and PM
Permanent Sustainment	Any	Previously Approved Operational Capability Requirements Document	Per JCIDS or previous guidance
		An AF Form 1067 (approved IAW this Instruction and AFI 63-131) is used for configuration control and to summarize previously approved requirements.	
Permanent Capability	< 10.0% of ACAT II Minimum Thresholds * & < $50M total expenditure **	AF Form 1067	Sponsor and PM
	< 10.0% of ACAT II Minimum Thresholds * & > $50M total expenditure **	AF Form 1067	AF/A5R
	> 10.0% of ACAT II Minimum Thresholds *	Operational Capability Requirements Documents	See **Table 2.1**

* Consideration must be given to both RDT&E and procurement amounts

** Total dollar amounts are based on FY 2000 constant dollars

8.6. Adopted Forms:

AF Form 1067, Modification Proposal

DD Form 250, Material Inspection and Receiving Report

PHILIP. M. BREEDLOVE, Lt Gen, USAF
DCS, Operations, Plans, and Requirements

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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Air Force Requirements Oversight Council Charter

AFPD 10-6, *Capabilities-Based Planning & Requirements Development*, 31 May 2006

AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*, 8 March 2007

AFPD 10-28, *Air Force Concept Development*, 24 October 2005

AFPD 16-10, *Modeling and Simulation*, 10 March 2006

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DoDI 3150.09, *The Chemical, Biological, Radiological, and Nuclear (CBRN) Survivability Policy*, 17 August 2009

CJCSI 3137.01, *The Functional Capabilities Board Process*, 26 May 2009

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CJCSI 3312.01, *Joint Military Intelligence Requirements Certification*, 26 February 2008

CJCSI 3470.01, *Rapid Validation and Resourcing of Joint Urgent Operational Needs (JUONS) in the Year of Execution*, 9 July 2007

CJCSI 5123.01, *Charter of the Joint Requirements Oversight Council*, 17 April 2010

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JS/J8, *Manual for the Operation of the Joint Capabilities Integration and Development System*, 1 March 2009

Embedded Web Links

Note: *Some websites require Air Force Portal sign-on to gain access.*

AF/A5RP Requirements: **https://www.my.af.mil/gcss-af/afp40/USAF/ep/globalTab.do?command=org&channelPageId=-569424&pageId=681742**

JCIDS Manual: **https://www.intelink.gov/wiki/JCIDS** Manual

Air Force e-Publishing: **http://www.e-publishing.af.mil/**

OAS: **http://www.oas.kirtland.af.mil**

Abbreviations and Acronyms

ACAT—acquisition category

ADM—acquisition decision memorandum

AFAMS—Air Force Agency for Modeling and Simulation

AFIT—Air Force Institute of Technology

AFLIRP—Air Force Lesson Issue Resolution Program

AFMAN—Air Force Manual

AFROC—Air Force Requirements Oversight Council

AFROCM—Air Force Requirements Oversight Council Memorandum

AFL2P—Air Force Lessons Learned Program

AOA—analysis of alternatives

APB—acquisition program baseline

APPG—Annual Planning and Programming Guidance

ATD—advanced technology demonstration

CAPE—Cost Assessment and Program Evaluation

CBA—capabilities-based assessment

CBRN—chemical, biological, radiological, and nuclear

CCA—Component Cost Analysis

CCJO—capstone concept for joint operations

CCTD—Concept Characterization and Technical Description

CDD—capability development document

CDR—critical design review

CI—configuration item

CJCS—Chairman, Joint Chiefs of Staff

CJCSI—Chairman, Joint Chief of Staff Instruction

COA—course of action

CONOPS—concept of operations

CPD—capability production document

CPM—capability portfolio manager

CRM—comment resolution matrix

CSAF—Chief of Staff of the United States Air Force

DAB—Defense Acquisition Board

DAG—Defense Acquisition Guide

DAU—Defense Acquisition University

D/CAPE—Director, Cost Assessment and Program Evaluation

DCR—DOTMLPF change recommendation

DDNI/M—Deputy Director of National Intelligence for Management

DDR—Deputy Director for Requirements

DIA—Defense Intelligence Agency

DoD—Department of Defense

DOE—Department of Energy

DOTMLPF—doctrine, organization, training, materiel, leadership and education, personnel, and facilities

DPPG—Defense Planning and Programming Guidance

DRU—direct reporting unit

DT&E—Developmental Test and Evaluation

EA—evolutionary acquisition

EMD—Engineering and Manufacturing Development

FCB—functional capabilities board

FOA—field operating agency

FOC—full operational capability

FoS—family of systems

FOT&E—follow-on operational test and evaluation

FRP—full rate production

FY—fiscal year

GEF—Guidance for the Employment of the Force

HPT—high performance team

HQ USAF or HAF—Headquarters Air Force, includes the Secretariat and the Air Staff

HSI—human systems integration

IAC—International Armaments Cooperation

ICD—initial capabilities document

IOC—initial operational capability

IOT&E—initial operational test and evaluation

IPL—integrated priority list

IRSS—Information & Resource Support System

ISP—information support plan

IT—information technology

ITAB—Information Technology Acquisition Board

ITT—integrated test team

IT/NSS—Information Technology/National Security System

JCA—Joint Capability Area

JCB—Joint Capabilities Board

JCIDS—Joint Capabilities Integration and Development System

JIC—Joint integrating concept

JCTD—Joint capability technology demonstration

JFC—Joint Functional Concept

JLLP—Joint Lessons Learned Program

JOC—Joint Operating Concept

JOpsC—Joint Operations Concepts

JS—Joint Staff

JPD—Joint Potential Designator

JRO—Joint Requirements Office

JROC—Joint Requirements Oversight Council

JROCM—Joint Requirements Oversight Council Memorandum

JUON—Joint Urgent Operational Need

JWICS—Joint Worldwide Intelligence Communications System

KM/DS—Knowledge Management/Decision Support

KPP—key performance parameter

KSA—key system attribute

LCMP—Life Cycle Management Plan

LFT&E—live fire test & evaluation

LRIP—low-rate initial production

MAJCOM—Major Command

MAIS—major automated information system

MDA—Milestone Decision Authority

MDAP—Major Defense Acquisition Program

MDD—Materiel Development Decision

MOE—measure of effectiveness

MOP—measure of performance

MRB—Mission Requirements Board

M&S—modeling and simulation

MS—Milestone

NDS—National Defense Strategy

NGB—National Guard Bureau

NMS—National Military Strategy

NR—KPP—net-ready key performance parameter

NSS—National Security Strategy

ORD—Operational Requirements Document

OSD—Office of the Secretary of Defense

OT&E—operational test and evaluation

PM—program manager

POC—point of contact

POM—Program Objective Memorandum

PDR—Preliminary Design Review

QDR—Quadrennial Defense Review

RCT—requirements correlation table

RDT&E—research, development, test and evaluation

RFP—request for proposal

RMCT—Requirements Management Certification Training

ROM—rough order of magnitude

RRP—rapid response process

RSR—requirements strategy review

S&T—Science and Technology

SAE—Service Acquisition Executive

SAP—special access program

SEP—systems engineering plan

SDR—System Design Review

SECAF—Secretary of the Air Force

SME—subject matter expert

SoS—system of systems

SRD—System Requirements Document

T&E—Test and Evaluation

TDS—Technology Development Strategy

TEMP—Test and Evaluation Master Plan

UON—urgent operational need

USD (AT&L—Under Secretary of Defense (Acquisition, Technology and Logistics)

USecAF—Under Secretary of the Air Force

VCJCS—Vice Chairman of the Joint Chiefs of Staff

VCSAF—Vice Chief of Staff of the United States Air Force

Terms

Acquisition Category (ACAT)—Categories established to facilitate decentralized decision making and execution, and compliance with statutorily imposed requirements. The categories determine the level of review, decision authority, and applicable procedures.

Acquisition Program Baseline (APB)—Each program's APB is developed and updated by the program manager and will govern the activity by prescribing the cost, schedule, and performance constraints in the phase succeeding the milestone for which it was developed. The APB captures the sponsor capability needs, including the key performance parameters, which are copied verbatim from the capability development document.

Additional Attribute—A characteristic so significant it must be verified by testing or analysis. Whenever possible, attributes should be stated in terms that reflect the capabilities necessary to operate in the full range of military operations and the environment intended for the system, family of systems (FoS), or system of systems (SoS). Additional attributes must be measurable, testable, and obtainable, and require AF/A5R approval (or delegate) to change.

Advanced Technology Demonstration (ATD)—One method of technology transition. ATDs are used to demonstrate the maturity and potential of advanced technologies for enhanced military operational capability or cost effectiveness, and reduce technical risks and uncertainties at the relatively low costs of informal processes.

AF Form 1067 Modification Proposal—An AF Form 1067 documents the submission, review, and approval of requirements for modifications to fielded Air Force systems.

Analysis of Alternatives (AoA)—The AoA is an analytical comparison of the operational effectiveness, suitability, risk, and life-cycle cost of alternatives that satisfy established capability needs stipulated in an approved ICD. The AoA helps decision makers select courses of action (COA) to satisfy an operational capability need and supports the development of the initial requirements correlation table (RCT).

Architecture—(1) The fundamental organization of a system embodied in its components, their relationships to each other, and to the environment, and the principles guiding its design and evolution. [IEEE STD 1471-2000]. (2) The structure of components, their relationships and the principles and guidelines governing their design and evolution over time Federal Enterprise Architecture.

Capabilities-Based Assessment (CBA)—The CBA is the Joint Capabilities Integration and Development System analysis process. It answers several key questions for the validation authority prior to their approval: define the mission; identify capabilities required; determine the attributes/standards of the capabilities; identify gaps/shortfalls; assess operational risk associated with the gaps/shortfalls; prioritize the gaps/shortfalls; identify and assess potential non-materiel solutions; provide recommendations for addressing the gaps/shortfalls.

Capability Development Document (CDD)—A document that captures the information necessary to develop a proposed program(s), normally using an evolutionary acquisition strategy. The CDD outlines an affordable increment of militarily useful, logistically supportable, and technically mature capability. The CDD may define multiple increments if there is sufficient definition of the performance attributes (key performance parameters, key system attributes, and other attributes) to allow approval of multiple increments.

Capability Gaps—The inability to achieve a desired effect under specified standards and conditions through combinations of means and ways to perform a set of tasks. The gap may be the result of no existing capability, lack of proficiency in existing capability, or lack of sufficiency in existing capability.

Capability Need—A capability identified through the CBA, required to be able to perform a task within specified conditions to a required level of performance.

Capability Production Document (CPD)—A document that addresses the production elements specific to a single increment of an acquisition program. The CPD defines an increment of militarily useful, logistically supportable, and technically mature capability that is ready for a production decision. The CPD defines a single increment of the performance attributes (key performance parameters, key system attributes, and other attributes) to support a MS C decision.

Capability Shortfall—A lack of full military utility needed by an operational sponsor to effectively execute a task.

Capstone Concept for Joint Operations (CCJO)—The CCJO describes in broad terms the vision for how the Joint force will operate in response to a wide variety of security challenges 10-20 years in the future. It proposes that future Joint force commanders will combine and subsequently adapt some combination of four basic categories of military activity—combat, security, engagement, and relief and reconstruction—in accordance with the unique requirements of each operational situation. The concept is informed by current strategic guidance, but because it looks to the future, it is intended to be adaptable, as it must be, to changes in that guidance.

Certification—A statement of adequacy provided by a responsible agency for a specific area of concern in support of the validation process.

Combatant Commander—A commander of one of the unified or specified combatant commands established by the President.

Concept Characterization and Technical Description (CCTD)—The CCTD captures essential information about a prospective materiel approach to address an identified capability need. CCTD preparation begins when the capabilities planning process (CBA) determines that a materiel approach may be necessary to address an identified gap. Information in the CCTD can assist in early decisions associated with narrowing down the analytical trade space of materiel solutions, and provides the initial technical baseline upon which subsequent analyses and documents are built. Guidance on CCTD development is available from SAF/AQR.

Concept of Operations (CONOPS)—A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The CONOPS frequently is embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose (also called a commander's concept).

Course of Action (COA)—The COA is a planning and decision process that culminates in a sponsor decision. 'It principally refers to the decision to proceed or not proceed with development of one or more prospective materiel solutions as informed by an AoA. The COA includes a series of alternative program choices developed by the MDA or designate, presented to a sponsor and that once a specific COA is selected, becomes a formal agreement between the MDA and the operator (usually Lead Command Commander) that clearly articulates the performance, schedule, and cost expectations of the program. The COA provides the basis for the Technology Development Strategy during the Technology Development phase.

Defense Business System—The term "defense business system" means an information system, other than a national security system, operated by, for, or on behalf of the Department of Defense, including financial systems, mixed systems, financial data feeder systems, and information technology and information assurance infrastructure, used to support business activities, such as acquisition, financial management, logistics, strategic planning and budgeting, installations and environment, and human resource management.

DD Form 250—The DD Form 250 (Material Inspection and Receiving Report) is a multipurpose report used : (1) provide evidence of acceptance at origin/destination; (2) to provide evidence of Government contract quality assurance at origin/destination; (3) for supply packing list(s); (4) for document shipping/receiving; (5) as a contractor invoice; and (6) commercial invoice support.

DoD 5000 Series—DOD 5000 series refers collectively to DODD 5000.01, DODI 5000.02., *the Defense Acquisition Guide* (DAG), and other relevant DoD 5XXX publications.

DoD Components—The DoD components consist of the Office of the Secretary of Defense, the Military Departments, the Chairman of the Joint Chiefs of Staff, the combatant commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, DoD Field Activities, and all other organizational entities within the Department of Defense.

Enabling Concept—Describes how a particular task or procedure is performed, within the context of a broader functional area, using a particular capability, such as a specific technology, training or education program, organization, facility, etc. An enabling concept describes the accomplishment of a particular task that makes possible the performance of a broader military function or sub-function. See AFPD 10-28, *Air Force Concept Development*, for further information on Air Force concepts.

Endorsement—A statement of adequacy, and any limitations, provided by a responsible agency for a specific area of concern in support of the validation process.

Environment—Air, water, land, living things, built infrastructure, cultural resources, and the interrelationships that exist among them.

Experiments—Experiments test candidate technologies alone and as components in new systems and are a critical part of the development of a new technology. Experiments facilitate the transition of a device from operation in the laboratory to operation as a component or system in the field.

Evolutionary Acquisition (EA)—Evolutionary acquisition is the preferred DoD strategy for rapid acquisition of mature technology for the sponsor. An evolutionary approach delivers capability in increments, recognizing, up-front, the need for a future capability improvements. The objective is to balance needs and available capability with resources, and to put capability into the hands of the warfighter quickly.

Family-of-Systems (FoS)—A set of systems that provide similar capabilities through different approaches to achieve similar or complementary effects. For instance, the warfighter may need the capability to track moving targets. The FoS that provides this capability could include unmanned or manned aerial vehicles with appropriate sensors, a space-based sensor platform or a special operations capability. Each can provide the ability to track moving targets but with differing characteristics of persistence, accuracy, timeliness, etc.

Feasible—A requirement that is technically achievable and executable within the estimated schedule and budgeted life cycle cost.

Functional Capabilities Board (FCB)—A permanently established body that is responsible for the organization, analysis, and prioritization of Joint warfighting capabilities within an assigned functional area.

Full Operational Capability (FOC)—The full attainment of the capability to effectively employ a weapon system, item of equipment, or system of approved specific characteristics, which is manned and operated by a trained, equipped, and supported military unit or force. FOC is not necessarily a date; it defines the criteria necessary to declare full operational capability.

Full-Rate Production—Production of economic quantities following stabilization of the system design and prove-out of the production process.

Gatekeeper—That individual who makes the initial JPD of operational capability requirements documents. This individual will also make a determination of the lead and supporting Functional Capabilities Boards (FCBs) for capability documents. The Gatekeeper is supported in these functions by the FCB working group leads and the JS/J6. The Joint Staff Deputy Director for Requirements, JS/J8, serves as the JCIDS Gatekeeper.

Human Systems Integration (HSI)—Includes the integrated and comprehensive analysis, design and assessment of requirements, concepts and resources for system manpower, personnel, training, environment, safety, occupational health, habitability, survivability, and human factors engineering.

Implementing Command—The command (usually Air Force Materiel Command or Air Force Space Command) providing the majority of personnel in direct support of the program manager responsible for development, production, and sustainment activities.

Increment—A militarily useful and supportable operational capability that can be effectively developed, produced or acquired, deployed, and sustained. Each increment of capability will have its own set of threshold and objective values set by the sponsor. Technology is developed to a desired maturity and injected into the delivery of an increment of capability.

Information Assurance (IA)—Information operations that protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and non-repudiation. This includes providing for restoration of information systems by incorporating protection, detection, and reaction capabilities.

Information & Resource Support System (IRSS)—IRSS is web-based Air Force-wide automated system that provides the requirements community the ability to develop, coordinate, task, track, and store all operational capability requirements documents (i.e., ICDs, CDDs, CPDs), along with their associated analysis and briefings, within the Air Force requirements process. IRSS resides on the Air Force SIPRNET Portal.

Information Support Plan (ISP)—The identification and documentation of information needs, infrastructure support, IT and NSS interface requirements and dependencies focusing on net-centric, interoperability, supportability, and sufficiency concerns.

Information System—A discrete set of information resources organized for collection, storage, processing, maintenance, use, sharing, dissemination, disposition, display, or transmission of

information. Includes automated information system (AIS) applications, enclaves, outsourced IT-based processes, and platform IT interconnections.

Initial Capabilities Document (ICD)—Summarizes the CBA and recommends a materiel approach or a combination of materiel and non-materiel approaches to satisfy specific capability gaps/shortfalls. It defines the capability gap(s) in terms of the functional area, the relevant range of military operations, desired effects, time, and DOTMLPF and policy implications and constraints. The ICD summarizes the results of the DOTMLPF analysis and the DOTMLPF approaches (materiel and non-materiel) that may deliver the required capability. The outcome of an ICD could be one or more Joint DOTMLPF change recommendations or CDDs and/or CPDs.

Initial Operational Capability (IOC)—That first attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics with the appropriate number, type, and mix of trained and equipped personnel necessary to operate, maintain, and support the system. It is normally defined in the CDD. *NOTE:* IOC is event-driven and not tied to a specific future date.

Integrated Architecture—An architecture consisting of multiple views or perspectives (operational view, systems view, and technical view) that facilitates integration and promotes interoperability across family of systems and systems of systems and compatibility among related architectures.

Intelligence Sensitivity—Any program/initiative that consumes, processes or produces intelligence information, thereby requiring threat or intelligence infrastructure support, and which will be measured and evaluated by a program or project office in terms of cost, performance, and impact on warfighter capabilities and fielding, shall be considered intelligence-sensitive. If it is likely that, in the future, the program/initiative would produce, consume, process, or handle intelligence information, then it should be considered intelligence-sensitive.

Intelligence Support—The totality of resources needed to ensure effective operation of a system once operational from an intelligence perspective. This includes intelligence people, products, processes, systems, training, and/or facilities.

Interoperability—The ability of systems, units, or forces to provide data, information, materiel, and services to and accept the same from other systems, units, or forces and to use the data, information, materiel, and services so exchanged to enable them to operate effectively together. IT and NSS interoperability includes both the technical exchange of information and the end-to-end operational effectiveness of that exchange of information as required for mission accomplishment. Interoperability is more than just information exchange. It includes systems, processes, procedures, organizations and missions over the life cycle and must be balanced with information assurance.

Joint Capability Area (JCA)—Collections of like DOD capabilities functionally grouped to support capability analysis, strategy development, investment decision making, capability portfolio management, and operational force development and operational planning. See CJCSI 3170.01 for additional information.

Joint Capabilities Board (JCB)—The JCB functions to assist the Joint Requirements Oversight Council (JROC) in carrying out its duties and responsibilities. The JCB reviews and, if appropriate, endorses all operational capability requirements and Joint DOTMLPF change recommendation documents prior to their submission to the JROC. The JCB is chaired by the

Joint Staff Director of Force Structure, Resources and Assessment (JS/J8). It is comprised of general and flag officer representatives of the Services.

Joint Capability Technology Demonstration (JCTD)—A demonstration of the military utility of a significant new technology and an assessment to clearly establish operational utility and system integrity.

Joint Force—A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments operating under a single Joint force commander.

Joint Operational Environment—The environment of land, sea, and/or airspace within which a Joint force commander employs capabilities to execute assigned missions.

Joint Operations Concepts (JOpsC)—JOpsC is a family of Joint Future Concepts consisting of a Capstone Concept for Joint Operations, Joint Operating Concepts (JOCs), Joint Functional Concepts (JFCs) and Joint Integrating Concepts (JICs). They are a visualization of future operations and describe how a commander, using military art and science, might employ capabilities necessary to successfully meet challenges 8 to 20 years in the future. Ideally, they will produce military capabilities that render previous ways of warfighting obsolete and may significantly change the measures of success in military operations overall. JOpsC presents a detailed description of "how" future operations may be conducted and provides the conceptual basis for Joint experimentation and capabilities-based assessments (CBAs). The outcomes of experimentation and CBA will underpin investment decisions leading to the development of new military capabilities beyond the Future Years Defense Program.

Joint Potential Designator (JPD)—A designation assigned by the Gatekeeper to determine the Joint Capabilities Integration and Development System validation and approval process and the potential requirement for certifications and/or endorsements.

1. "**JROC Interest**" designation will apply to all potential or designated ACAT I/IA programs and capabilities that have a potentially significant impact on interoperability in allied and coalition operations. All Joint doctrine, organization, training, materiel, leadership and education, personnel, and facilities change recommendation (DCR) documents will be designated JROC Interest. These documents will receive all applicable certifications, including a weapon safety endorsement when appropriate, and be staffed through the JROC for validation and approval. An exception may be made for ACAT IAM programs without significant impact on Joint warfighting (i.e., defense business systems). These programs may be designated Joint Integration, Joint Information, or Independent.

2. "**JCB Interest**" designation will apply to all ACAT II and below programs where the capabilities and/or systems associated with the document affect the Joint force and an expanded Joint review is required. These documents will receive all applicable certifications, including a weapon safety endorsement when appropriate, and be staffed through the JCB for validation and approval.

3. "**Joint Integration**" designation will apply to ACAT II and below programs where the capabilities and/or systems associated with the document do not significantly affect the Joint force and an expanded Joint review is not required. Staffing is required for applicable certifications (information technology and National Security Systems (NSS) interoperability and supportability and/or intelligence), and for a weapon safety endorsement, when appropriate. Once the required certification(s)/weapon safety endorsement are completed, the document may

be reviewed by the FCB. Joint Integration documents are validated by the AFROC and approved by VCSAF.

4. "**Joint Information**" designation applies to ACAT II and below programs that have interest or potential impact across Services or agencies but do not have significant impact on the Joint force and do not reach the threshold for JROC Interest. No certifications or endorsements are required. Once designated Joint Information, staffing is required for informational purposes only and the FCB may review the document. Joint Information documents are validated by the AFROC and approved by VCSAF.

5. "**Independent**" designation will apply to ACAT II and below programs where the capabilities and/or systems associated with the document do not significantly affect the Joint force, an expanded review is not required, and no certifications or endorsements are required. Once designated Independent, the FCB may review the document. Independent documents are validated by the AFROC and approved by VCSAF.

Joint Requirements Oversight Council Memorandum (JROCM)—Official JROC correspondence generally directed to an audience(s) external to the JROC — usually decisional in nature.

Joint Urgent Operational Needs (JUON)—An urgent operational need identified by a combatant commander involved in an ongoing named operation. A JUON's main purpose is to identify and subsequently gain Joint Staff validation and resourcing solution, usually within days or weeks, to meet a specific high-priority combatant commander need. The scope of a combatant commander JUON will be limited to addressing urgent operational needs that: (1) fall outside of the established Service processes; and (2) most importantly, if not addressed immediately, will seriously endanger personnel or pose a major threat to ongoing operations. They should not involve the development of a new technology or capability; however, the acceleration of a JCTD or minor modification of an existing system to adapt to a new or similar mission is within the scope of the JUON validation and resourcing process.

Key Performance Parameter (KPP)—An attribute or characteristic considered critical or essential to the development of an effective military capability. KPPs must be measurable, testable, and obtainable, supported by analytic rigor that demonstrates its operational utility and the need for resource investment. CDD and CPD KPPs are included verbatim in the acquisition program baseline. KPP changes require VCSAF approval (or delegate).

Key System Attribute (KSA)—An attribute or characteristic considered crucial to achieving a balanced solution/approach to a capability, but not critical enough to be designated a KPP. KSAs provide decision makers with an additional level of capability performance characteristics (a priority) below the KPP level. KSAs must be measurable, testable, and obtainable, and require VCSAF approval (or delegate) to change.

Knowledge Management/Decision System (KM/DS)—An electronic staffing and repository tool the Joint Staff uses for development and staffing of Joint operational capability requirements documents.

Low-Rate Initial Production (LRIP)—Production of the system in the minimum quantity necessary (1) to provide production-configured or representative articles for operational tests

pursuant to Title 10 §2399; (2) to establish an initial production base for the system; and (3) to permit an orderly increase in the production rate for the system sufficient to lead to full-rate production upon the successful completion of operational testing.

Materiel Development Decision (MDD)—The Materiel Development Decision review is the formal entry point into the acquisition management system and is mandatory for all programs. At the MDD, the MDA approves the AoA study guidance; determines the acquisition phase of entry; identifies the initial review milestone; and designates the lead DoD Component(s).

Materiel Solution—Correction of a deficiency, satisfaction of a capability gap, or incorporation of new technology that results in the development, acquisition, procurement, or fielding of a new item (including ships, tanks, self-propelled weapons, aircraft, etc., and related software & data, spares, repair parts, and support equipment, but excluding real property, installations, and utilities) necessary to equip, operate, maintain, and support military activities without disruption as to its application for administrative or combat purposes. In the case of family of systems and system of systems approaches, an individual materiel solution may not fully satisfy a necessary capability gap on its own.

Milestones—Major decision points that separate the phases of an acquisition program.

Milestone Decision Authority (MDA)—The individual designated, in accordance with criteria established by the Under Secretary of Defense for Acquisition, Technology and Logistics, the Assistant Secretary of Defense (Networks and Information Integration), for Automated Information System acquisition programs, or by the Under Secretary of the Air Force, as the DOD Space MDA, to approve entry of an acquisition program into the next phase.

Militarily Useful Capability—A capability that achieves military objectives through operational effectiveness, suitability and availability, which is interoperable with related systems and processes, transportable and sustainable when and where needed and at costs known to be affordable over the long term.

Modification—An alteration to a configuration item applicable to a warfighter system (i.e., aircraft, missiles, support equipment, ground stations software (imbedded), trainers, etc.). As a minimum, the alteration changes the form, fit, function or interface of the item. A weapon system is defined as 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.

Non-Materiel Solution—Changes in doctrine, organization, training, materiel, leadership and education, personnel, facilities, or policy (including all human systems integration domains) to satisfy identified functional capabilities. The materiel portion is restricted to commercial or non-developmental items that may be purchased commercially or by purchasing more systems from an existing materiel program. The acquisition of the materiel portion must comply with all acquisition policies.

Objective Value—Developed only when absolutely necessary, it is the desired operational goal associated with a performance attribute beyond which any gain in utility does not warrant additional expenditure. The objective value is an operationally significant increment above the threshold. An objective value may be the same as the threshold when an operationally significant increment above the threshold is not significant or useful.

Operating Command—Those commands operating a system, subsystem, or item of equipment.

Operating Concept—A description in broad terms of the application of military art and science within a defined set of parameters. In simplest terms, operating concepts articulate how a commander will plan, prepare, deploy, employ or sustain a joint force against potential adversaries within a specified set of conditions. Operating concepts encompass the full scope of military actions required to achieve a specific set of objectives. See AFPD 10-28 for further information on Air Force concepts.

Operational Capability— The ability to achieve a desired effect under specified standards and conditions through combinations of means and ways across the doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) to perform a set of tasks to execute a specified course of action. It is defined by an operational sponsor and expressed in broad operational terms in the format of an initial capabilities document or a Joint DOTMLPF change recommendation. In the case of materiel proposals/documents, the definition will progressively evolve to DOTMLPF performance attributes identified in the capability development document and the capability production document.

Operational Capability Requirements Document—An ICD, CDD, CDP, or Joint DCR.

Operational Suitability—The degree to which a system can be placed and sustained satisfactorily in field use with consideration given to availability, compatibility, transportability, interoperability, reliability, wartime usage rates, maintainability, environmental, safety and occupational health, human factors, habitability, manpower, logistics, supportability, natural environment effects and impacts, documentation, and training requirements.

Operational Effectiveness—Measure of the overall ability to accomplish a mission when used by representative personnel in the environment planned or expected for operational employment of the system considering organization, doctrine, supportability, survivability, vulnerability, and threat.

Operator—An operational command or agency that employs acquired systems for the benefit of warfighters. Operators may also be warfighters.

Operational Test and Evaluation (OT&E)—1. The field test, under realistic combat conditions, of any item of (or key component of) weapons, equipment, or munitions for the purpose of determining the effectiveness and suitability of the weapons, equipment, or munitions for use in combat by typical military users; and the evaluation of the results of such test. (Title 10 §139(a)(2)) **2.** Testing and evaluation conducted in as realistic an operational environment as possible to estimate the prospective system's operational capabilities and limitations. In addition, OT&E provides information on operational effectiveness and suitability, organization, personnel requirements, doctrine, and tactics. It may also provide data to support or verify material in operating instructions, publications, and handbooks. *NOTE:* The term OT&E is often substituted for IOT&E, QOT&E, or FOT&E, and depending on the context, has the same meaning as those terms.

Partner Nations—Those countries with which the Air Force conducts International Armaments Cooperation (IAC) programs to harmonize international research, development, test, evaluation, acquisition, production and support of weapons and weapons-related technology. See AFI 16-110 for additional information regarding IAC program descriptions, purpose and objectives.

Procurement—Procurement appropriations fund those acquisition programs that have been approved for production (to include low-rate initial production (LRIP) of acquisition objective quantities), and all costs integral and necessary to deliver a useful end item intended for operational use or inventory upon delivery.

Program Manager (PM)—As used in this instruction applies collectively to System Program Director, Product Group Manager, Single Manager, or acquisition program manager. The PM is the designated individual with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the sponsor's operational needs. The PM shall be accountable for credible cost, schedule, and performance reporting to the MDA.

Rapid Response Process (RRP)—An expedited process for documenting and staffing materiel solutions to urgent, time-sensitive requirements. The process is fully described in AFI 63-114.

Requirements Correlation Table (RCT)—The RCT is a formatted summary of required capability characteristics with threshold values, and if absolutely necessary, objective values within the AoA final report, CDD, and CPD text. It supports the development of follow-on requirements and acquisition documents, and assists operational and system requirements traceability.

Requirements Manager—A military manager or DOD civilian manager charged with assessing, developing, validating, and prioritizing requirements and associated requirements products through the Joint Capabilities Integration and Development System process. Requirements managers are identified by the sponsor and are certified by Defense Acquisition University upon completion of the appropriate courses.

Sponsor—The organization responsible for documentation, periodic reporting, and funding actions necessary to support needed capabilities (e.g., MAJCOM, FOA, DRU, etc.).

Stakeholder—personnel or organizations (e.g., warfighters, sponsor, or agencies), who are actively involved in the development of the capability or whose interests may be positively or negatively affected by the performance of the capability.

System-of-Systems (SoS)—A set or arrangement of interdependent systems that are related or connected to provide a given capability. The loss of any part of the system significantly degrades the performance or capabilities of the whole.

Systems View (SV)—A view that identifies the kinds of systems, how to organize them, and the integration needed to achieve the desired operational capability. It will also characterize available technology and systems functionality.

Test and Evaluation Master Plan (TEMP)—Documents the overall structure and objectives of the T&E program. It provides a framework within which to generate detailed T&E plans and it documents schedule and resource implications associated with the T&E program. The TEMP identifies the necessary developmental, operational, and live-fire test activities. It relates program schedule, test management strategy and structure, and required resources to: critical operational issues; critical technical parameters; objectives and thresholds documented in the requirements document; and Milestone decision points.

Threshold—A minimum acceptable operational value below which the utility of the system becomes questionable.

Validation—The review of documentation by an operational authority other than the sponsor to confirm the operational capability. Validation is a precursor to approval.

Warfighter—An operational command or agency that receives or will receive benefit from the acquired system. Combatant commanders and their Service component commands are the warfighters. There may be more than one warfighter for a system. Because the Service component commands are required to organize, equip, and train forces for the combatant commanders, they are seen as warfighters for systems.

NOTE: The purpose of this glossary is to help the reader understand the terms listed as used in this publication. It is not intended to encompass all terms. See pertinent Joint and Air Force specific publications for standardized terms and definitions for DoD and Air Force use.

Attachment 2

DOCUMENT REVIEW

A2.1. Document Review and Approval. Sponsors are responsible for ensuring a full review of draft operational capability requirements documents, resolution of issues identified during this review, and submittal of documents for validation and approval. For operational capability requirements documents, the extent of this review and designation of the validation and approval authority is determined by the JPD assigned to the document and the ACAT level of the program. Staffing flowcharts and guidance are located on the AF/A5RP Requirements web site.

A2.2. Air Force Points of Contact. Each MAJCOM or agency responsible for reviewing operational capability requirements documents will establish a single office with responsibility for receiving documents for comment, distributing the document within their organization, and consolidating and returning comments. For HAF, AF/A5R is the single point of contact for document reviews. AF/A5R has delegated this authority to AF/A5RP to staff the document to the appropriate level for HAF review on all ICDs, CDDs, CPDs, Joint DCRs and other Joint-sponsored documents (i.e., CONOPS, FCB/Gatekeeper reviews, CBAs, etc., including Joint Worldwide Intelligence Communication System (JWICS) documents at the TS/SCI level).

A2.3. Information & Resource Support System (IRSS). IRSS is an automated tool designed to facilitate developing, staffing, and archiving copies of operational capability requirements documents. A listing of applicable agencies and offices to be included in all Air Force reviews is located within IRSS. Sponsors will submit documents and taskings via IRSS to AF/A5RP for HAF Review, Joint Review, AFROC validation, JROC approval, and to track the history of document development. AF/A5RP will forward documents and tasking to appropriate HAF and Joint Staff offices. After a document is approved, the Air Force Requirements Document Librarian will archive a copy of the document and related information within IRSS. Detailed information on IRSS procedures and conventions is located on the AF/A5RP Requirements web site.

A2.4. Air Force Review. AF/A5R has delegated Air Force flag-level review tasking authority to AF/A5RP for all ICDs, CDDs, CPDs, and Joint DCRs. To accomplish this task, AF/A5RP subtasks other HAF organizations to obtain the HAF positions. Normally, there is only one round of Air Force review and comment on an operational capability requirements document. The intent is for this review to be at the O-6 level, but organizations may elevate the document to the appropriate level within their chain of command as they see fit. The normal review cycle is 21 calendar days; sponsors must provide justification if a shorter (or longer) review time is needed.

A2.4.1. HAF Subject Matter Expert Responsibilities. IRSS maintains a mandatory Air Force distribution list for all operational capability requirements document reviews. AF/A5RP relies on the HAF SME to identify organizations outside the IRSS distribution list and to ensure those organizations have access to the document under review. After coordination is complete, AF/A5RP will provide the HAF SME with access to all comments submitted via IRSS. The HAF SME is responsible for reviewing and consolidating all comments within IRSS. During comment consolidation, the HAF SME reviews each comment to make sure there are no duplicate comments. The HAF SME also reviews each comment to ensure they are of the correct category (i.e., critical, substantive, administrative) and downgrade from

critical to substantive or substantive to administrative if necessary. The HAF SME should contact the comment submitter before deleting or downgrading any comment.

A2.5. Joint Staff Review/Certifications. Sponsors will submit all draft operational capability requirements documents through AF/A5RP to the JS/J8 Gatekeeper for Joint review. The Deputy Director for Requirements (DDR), JS/J8 serves as the JS/J8 Gatekeeper. Documents developed by an AF/A5R-facilitated HPT are submitted for simultaneous Air Force and Joint Staff review. The JS/J8 Gatekeeper will designate a lead and any supporting FCBs with responsibility for the document and formally assign a JPD to the document. JPD designations are described in CJCSI 3170.01 and determine the level of Joint involvement in the review, certification, validation, and approval of a document. **Table A2.1** depicts the certifications required prior to approval of a operational capability requirements document. AF Forms 1067 are not submitted for the JS/J8 Gatekeeper process or Joint Staff review.

Table A2.1. Document Certification/Validation Authority.

Certification/ Validation	JROC/ JCB Interest	Joint Integration	Independent/ Joint Information	Documents
Threat Validation	DIA	DIA	Service	ICD, CDD, & CPD
Intelligence*	JS/J2	JS/J2	-	ICD, CDD, & CPD
Weapon Safety**	JS/J8	JS/J8	-	ICD, CDD, CPD, & Joint DCR
Interoperability & Supportability	JS/J6	JS/J6	-	CDD & CPD

* For programs that consume, produce, process, or handle intelligence data

** Applies to munitions programs only

A2.5.1. JROC Interest documents receive a Joint Phase 1 review (conducted at the O-6 level and above as designated by the reviewing organization). Following resolution of comments, these documents are presented to the AFROC for Air Force validation. Following the AFROC, JROC Interest documents with unresolved critical comments from Phase 1 review, or if directed by the document's lead FCB, are submitted for a Joint Phase 2 review (conducted at the flag level). Applicable certifications are then granted based on resolution of Phase 1 and, if necessary, Phase 2 comments. Upon attaining applicable certifications, documents are submitted for FCB and JCB review and JROC approval.

A2.5.2. JCB Interest documents go through the same review process as JROC Interest documents, but receive JCB approval instead of JROC approval.

A2.5.3. Joint Integration documents undergo a three-stage certification process. Stage I review is conducted in the same way as Phase 1 review for a JROC Interest document. A Stage II review is required only if there are unresolved critical comments from Stage I or if directed by the document's lead FCB. Both Stage I and Stage II reviews are conducted at the O-6 level for Joint Integration documents. After resolution of all critical comments from previous stages, the sponsor requests final certifications. This is Stage III of the process. All certifications for Joint Integration documents must be obtained prior to AFROC review and validation.

A2.5.4. Joint Information documents undergo a single stage of Joint review for informational purposes and for concurrence on the assigned JPD. Based on this review, the JPD may be changed to Joint Integration, JCB Interest, or JROC Interest. Comments submitted during the single Joint review on the content of Joint Information documents need not be addressed. Joint Information documents do not require any Joint certifications and are validated and approved by the Air Force.

A2.5.5. Independent documents do not undergo Joint review. No Joint certifications are required. These are validated and approved by the Air Force.

A2.6. Review of Non-Air Force-Sponsored Operational Capability Requirements Documents. The JS/J8 forwards all operational capability requirements documents with a JPD of JROC Interest, JCB Interest, Joint Integration, or Joint Information to AF/A5RP for Air Force review. Once received, AF/A5RP forwards the document via IRSS to all HAF and MAJCOM mandatory addressees listed on the Air Force Staffing Distribution list. After review, the HAF functional organization approves the Air Force position on the document. These documents are normally staffed only once to the Air Force for review and comment, but a Phase 2 review may be required if there are unresolved issues from the initial Joint review or if directed by the document's lead FCB.

A2.7. Document Coordination and Commenting. Lack of a response from any Air Force agency tasked to review an operational capability requirements document by the designated suspense date is considered concurrence (tasking agencies are not required to accept late comments). Document reviewers will submit comments and identify the significance of the comment as "critical," "substantive," or "administrative." Convincing support for critical and substantive comments will be provided in the comment matrix.

A2.7.1. Critical. A critical comment indicates non-concurrence with the document until the comment is satisfactorily resolved. Critical comments are restricted to cost, schedule and performance attributes—particularly KPPs and KSAs, concepts of operations, and other fundamental issues (such as sustainment, security, or violation of policies and directives) that would bring into question the rationale for the document to be approved. Documents with unresolved critical comments will not go to the AFROC unless approved by AF/A5R. Document reviewers will not make critical comments on issues not related to their area of responsibility (substantive comments are allowed, assuming commenter has expertise outside their current area of responsibility).

A2.7.2. Substantive. A substantive comment addresses a section in the document that appears to be, or is potentially unnecessary, incorrect, misleading, confusing, or inconsistent with other sections. Substantive comments do not indicate non-concurrence, but the document sponsor must consider all substantive comments for incorporation.

A2.7.3. Administrative. An administrative comment addresses typographical, format, or grammatical errors. The sponsor should consider all administrative comments.

A2.8. Comment Resolution. Document sponsors will consolidate all critical and substantive comments into two CRMs; one CRM contains comments from Air Force organizations, and the second CRM contains comments from the Joint Phase 1 review. A third CRM will be used if a Joint Phase 2 review is required. Sponsors will use the CRMs to document actions taken in response to each comment. The document sponsor must show the rationale for not fully

accepting a critical or substantive comment. The sponsor resolves all critical comments before submitting the document for AFROC review, unless otherwise approved by AF/A5R.

A2.8.1. Comment Resolution Timing. Per JS/J8 direction, the comment resolution period is 45 calendar days. If the comment resolution period is deemed excessive (over 45 days), JS/J8 or AF/A5R may direct re-staffing.

A2.8.2. Resolving Critical Comments. Resolve comments at the lowest possible level. If the document sponsor disagrees with a critical comment or the resolution requires a subjective response from the sponsor, contact the comment originator to work toward a mutually agreeable resolution. The method, point of contact (POC), and date of resolution must be documented in the CRM (e.g., "via telephone with Maj Smith on [xx] date"). If the resolution merely requires the substitution or addition of commenter-provided wording, sponsor resolution should indicate the comment was accepted ("A") and state that the recommended wording was accepted in its entirety—the comment originator need not be contacted.

A2.8.2.1. Adjudication Procedures. If a critical comment cannot be resolved, the issue is elevated as required to achieve final resolution. The intent of the adjudication process is to prevent a single office or individual from holding up the document indefinitely. If the document sponsor cannot adjudicate the comment with the comment originator, the issue is raised to the O-6 level for adjudication. If the comment cannot be resolved at the O-6 level, the document sponsor requests AF/A5RP support in adjudicating the comment. AF/A5RP may present the issue to AF/A5R (as necessary). In rare instances, the comment may remain open and be adjudicated at the AFROC. For adjudication issues with other Services or the Joint Staff, the HAF SME assists the document sponsor in working the issue with the applicable FCB Working Groups and FCBs. In rare cases, unresolved issues may be submitted to the FCB, JCB, or JROC for resolution.

A2.9. Document Completion. A signed AFROCM records validation of an Air Force operational capability requirements document. A signed JROCM records approval of a JROC Interest or JCB Interest operational capability requirements document. The CSAF approves ACAT I documents; VCSAF approves ACAT II and ACAT III documents. After document approval, the document sponsor will provide a copy of the final version to AF/A5RP via IRSS. AF/A5RP is responsible for entering a copy of the document and all supporting material into the Requirements Document Library. AF/A5R also forwards a copy to the JS/J8 Gatekeeper for archiving in KM/DS.

Attachment 3

RESPONDING TO WARFIGHTER URGENT OPERATIONAL NEEDS

This attachment details operational capabilities requirements activities associated with addressing Warfighter Urgent Operational Needs.

A3.1. Warfighter Urgent Operational Needs. Urgent Operational Needs (UONs) are needs identified during conflict or crisis situations that are life threatening or combat mission threatening, are unforeseen military requirements, and must be resolved as soon as practical. The UON process is intended to field readily available capabilities through accelerated means. The UON is not intended to be used for requesting non-materiel solutions or force deployments; however, it may identify a non-materiel approach as the most effective solution.

A3.1.1. UON Criteria. Organizations submitting or validating a UON must ensure the following criteria are met.

A3.1.1.1. The urgent need has identified a capability gap or shortfall that will result in imminent loss of life and/or prevent the successful completion of a critical, near-term combat mission.

A3.1.1.2. The UON origination and submission must come from a Warfighting Commander or the Commander's designated representative.

A3.1.2. Points of Contact. Each organization listed below will identify a single OPR for processing UONs and tracking UON-related activity within their organization:

A3.1.2.1. AF/A5R is the single HAF POC for operational capability requirements activities associated with this process. This includes receipt and HAF distribution of warfighter UONs and tracking UON related activities for CSAF.

A3.1.2.2. SAF/AQXA is the single POC for the Secretariat staff for operational capability acquisition activities associated with this process. This includes determination of an appropriate acquisition strategy in accordance with the Rapid Response Process (RRP) as described in AFI 63-114.

A3.1.2.3. Air Combat Command (ACC) is the Lead Command for UONs associated with air combat capabilities, air-breathing ISR capabilities, combat search and rescue, and combat support capabilities.

A3.1.2.4. Air Mobility Command (AMC) is the Lead Command for UONS associated with air mobility capabilities.

A3.1.2.5. Air Force Special Operations Command (AFSOC) is Lead Command for UONs associated with special operations capabilities.

A3.1.2.6. Air Force Space Command (AFSPC) is Lead Command for UONs associated with space and cyberspace-related capabilities.

A3.1.2.7. Air Force Global Strike Command (AFGSC) is the Lead Command for UONs associated with nuclear and global strike capabilities.

A3.1.2.8. Implementing commands, AFSPC and Air Force Materiel Command (AFMC), will assist the Lead Command in identifying potential solutions, developing the acquisition strategy, and test and evaluation strategy.

A3.2. Requirements Activities Associated with UON Identification. The Air Force UON process begins when a Warfighting Commander identifies a capability gap/shortfall and submits a UON.

A3.2.1. UON Format. A recommended format (see **Attachment 4**) for submission of a UON is provided with this attachment. SIPRNET e-mail is the preferred method of notification. The warfighter is encouraged to provide as much information as possible including possible or preferred solutions as well as any constraints that might affect the choice of a solution.

A3.2.1.1. UON Mandatory Distribution List. UONs must be submitted to the appropriate Lead Command (ACC/A8, AMC/A5/8, AFSPC/A5, AFSOC/A5, AFGSC/A5), SAF/AQX workflow, and AF/A5R workflow. Courtesy copies must be provided to AFMC/A5C workflow and AFSPC/A5X workflow.

A3.2.2. Early Notification. To facilitate mutual understanding of the need and expeditious identification of a satisfactory solution, warfighters are encouraged to contact the appropriate Lead Command as early as possible if a UON submission is being considered. Representatives from the warfighter, Lead Command, HAF subject matter experts, AF/A5R, SAF/AQX, and the program manager must work together to meet desired timelines.

A3.2.3. UON Validation. The Lead Command is responsible for validation of the warfighter's request as a UON against the previously stated criteria. If the request is not valid, the Lead Command will notify the requestor, SAF/AQX and AF/A5R within five calendar days.

A3.3. Requirements Activities Associated with Identifying a UON Solution.

A3.3.1. Pre-Course of Action Discussions. Upon receipt of a UON, the Lead Command, in discussions with SAF/AQX and AF/A5R, must first determine that the correct Lead Command has been identified and tasked. If not, the UON should be re-assigned and forwarded by the contacted Lead Command to the appropriate Lead Command with a courtesy copy provided to the submitting Warfighting Commander.

A3.3.2. Course of Action Development. Lead Commands will include appropriate HAF organizations when developing a course of action to deliver the required capability to the warfighter. The course of action must identify a technical solution, funding source(s), acquisition activities, test and evaluation requirements, and requirements strategies needed to field a capability. The selected course of action should provide the minimum number of articles to the warfighter's theater of operations needed to satisfy the UON. This process is not intended for equipping forces worldwide or modifying an entire fleet. The Lead Command will notify the requestor, SAF/AQX and AF/A5R of the selected course of action or status of the Lead Command's response within five calendar days of receipt of a warfighter's UON.

A3.3.2.1. Additional Lead Command Considerations. When selecting a COA, the following criteria apply.

A3.3.2.1.1. The capability provided in response to the UON should be fielded within 180 days of the initial warfighter request and impact an ongoing conflict or crisis situation.

A3.3.2.1.2. The capability provided in response to the UON should be supportable and sustainable, in the near term, within existing support structure.

A3.3.3. Technical Strategy. The Lead Command will work with the implementing command (AFMC or AFSPC) to identify and evaluate one or more potential solutions to the UON. Delivering required capabilities in time to meet the warfighter's need date is the prime consideration in selecting a solution, but Lead Commands and warfighters must also consider risk, affordability, supportability, technical maturity, compatibility with existing systems and concepts, compatibility with other planned modernizations, and any sponsor constraints. Consider the following possibilities when developing solutions.

A3.3.3.1. Non-materiel solutions such as changes to training practices, tactics, or operational or employment concepts.

A3.3.3.2. Permanent or temporary (T-1) modifications to an existing system

A3.3.3.3. Integrating a new munition or sub-system on an existing system.

A3.3.3.4. Purchasing additional articles of a fielded system or an off the shelf purchase of a government owned or commercial system.

A3.3.3.5. Accelerating delivery of an already planned system or capability.

A3.3.3.6. Acquiring a new system.

A3.3.4. Funding Strategy. There is no dedicated funding source to address warfighter UONs. The Lead Command is responsible for sourcing funds and will give UONs priority over other funding requirements. A funding strategy must include sustainment of the proposed capability until it is terminated or transitions to an established acquisition program. The Program Element for systems or missions affected by the UON should be considered the primary source of funding. If this is not feasible, the Lead Command will seek assistance from SAF/AQXR, SAF/FMBI, and appropriate program offices, Program Executive Officers, and Program Element Monitors to source and ensure availability of funds from investment appropriations (i.e., 3600, 3010, 3080, etc). Lead Commands do not normally have sufficient insight into these accounts to identify under-executing programs that might provide the best funding solution.

A3.3.5. Acquisition Strategy. For materiel solutions, the Lead Command will work with the implementing command and SAF/AQXR to determine an appropriate acquisition strategy.

A3.3.6. Test and Evaluation Strategy. The Lead Command should work with the implementing command and AF/TE to determine an appropriate test and evaluation strategy. Consider requesting a temporary increase in the resource priority rating for the proposed solution in accordance with AFI 16-301, *US Air Force Priority System for Resources Management,* if needed to access test resources. Reference AFI 63-104, *The SEEK EAGLE Program,* if aircraft-stores certification will be required.

A3.3.7. Requirements Strategy. Various types of acquisition approaches may be used to address a warfighter's UON. The type of documentation depends on the acquisition approach.

A3.3.7.1. AF Form 1067. Requirements for temporary or permanent modifications to existing systems (in theater) can be documented with an AF Form 1067. When using an AF Form 1067 to satisfy a UON, Block 9 of the form will contain the statement "This modification is needed to address an Urgent Operational Need." and reference the specific request.

A3.3.7.2. Pre-approved JCIDS Document. If a requirement already exists for the intended solution to a UON such as through an approved CDD or CPD, no additional requirements document is needed.

A3.3.7.3. Acceleration of Planned or New Acquisition. Accelerating a previously planned or new acquisition may be accomplished by providing direction to the appropriate acquisition activity. This may include initiating the Rapid Response Process outlined in AFI 63-114.

A3.3.7.4. Normal JCIDS documentation. Use of normal JCIDS process will be required when an urgent need has been approved; however, technology, funding, etc., does not exist to rapidly meet the warfighter requirement. This will delay the fielding of the solution and should be clearly communicated to the warfighting commander, AF/A5R and SAF/AQX.

A3.3.7.5. Implementation of the Rapid Response Process. If the Lead Command approves the UON but requires HAF involvement to complete the necessary course of action, the Lead Command will submit the original UON to SAF/AQX and AF/A5R along with the request to initiate the Rapid Response Process, as described in AFI 63-114.

A3.4. Requirements Activities Associated with Sustaining or Disposing of a UON Solution. The Lead Command may elect to sustain the solution and transition the interim capability into an acquisition program or dispose of the solution. Capabilities will terminate or transition to an acquisition program within two years of fielding. Lead Commands should begin planning as early as possible for the ultimate disposition of UON solutions.

A3.4.1. Transition to an Acquisition Program. When needed, the Lead Command will process the appropriate JCIDS documents (ICD, CDD and CPD) to establish requirements for a permanent acquisition program. It may be appropriate to request an ICD waiver and proceed directly to a CDD or CPD based on the demonstrated utility of the solution in actual operations. Requirements for permanent modifications may be documented with an AF Form 1067 and no further JCIDS documentation is needed.

A3.4.2. Disposal. The Lead Command will notify the program manager if the capability will not be retained beyond the immediate crisis. At the end of its useful life, the capability will be demilitarized and disposed of in accordance with all legal and regulatory requirements. See DoDI 5000.02.

A3.5. Joint Urgent Operational Needs (JUON). A JUON is an urgent need identified by a warfighting commander that require synchronization across multiple Service/agency providers to

ensure complete and timely combat capability is provided to the Joint warfighter. JUONs are submitted to the Joint Staff J-8 under the guidance of CJCSI 3470.01, *Rapid Validation and Resourcing of Joint Urgent Operational Needs (JUONS) in the Year of Execution*. SAF/AQX is the single AF POC for receipt of JUONs from the Joint Staff J-8. If a JUON is assigned to the Air Force, either as Sponsor or Co-Sponsor, SAF/AQX will forward the JUON to the appropriate Lead Command and AF/A5R within 5 calendar days. JUONs will be processed in the same manner as UONs.

Attachment 4

WARFIGHTER URGENT OPERATIONAL NEEDS - RECOMMENDED FORMAT

Note: This is a recommended format. The distribution addressees are mandatory. Requests should focus on identifying a capability gap or shortfall and any constraints that might impact selection of a solution. This format is provided to help the warfighter communicate the need. It is the Lead Command's responsibility to determine the best solution for filling the capability gap/shortfall. To ensure full understanding of the need and realistic expectations, the warfighter should contact the Lead Command as early as possible when considering submission of a UON. This early contact should include recommended verbiage when filling out this format.

PRECEDENCE: IMMEDIATE

FROM: Warfighting Commander

ACTION: Appropriate Lead Command (ACC/A8, AMC/A5/8, AFSPC/A5, AFSOC/A5, AFGSC/A5/8)

INFO: AFMC/A5C at afmc.a5c.workflow@wpafb.af.mil , (SIPRNET: afmc.a5c@afmc.af.smil.mil.), SAF/AQX at safaqx.workflow@pentagon.af.mil (SIPRNET: saf.aqx@af.pentagon.smil.mil) and AF/A5R at afa5r.workflow@pentagon.af.mil , (SIPRNET: a5r.scats@af.pentagon.smil.mil)

Include appropriate COCOM agencies: e.g., CENTCOM/J3

NOTE: SIPRNET e-mail is the preferred method for submitting a UON

CLASSIFICATION: As required

SUBJECT: URGENT OPERATIONAL NEED FOR (title of deficiency; if possible use an unclassified title)

A4.1. MISSION DESCRIPTION. Identify the operation and theater being supported. Identify the general mission area where the urgent operational deficiency exists (e.g., electronic combat, aircrew chemical defense, command and control, precision strike). If applicable, identify the specific system or platform (e.g., B-52, F-15, JDAM) associated with the request.

A4.2. REQUIRED CAPABILITY. Describe in broad terms the relevant capability or capabilities needed to address the mission area identified in the previous paragraph. This should include desired effects and outcomes as well as the tasks and functions that must be performed.

A4.3. URGENT OPERATIONAL NEED. Describe the capability shortfall or gap as specifically as possible to include the tasks or functions that cannot be accomplished or that are unacceptably limited. Identify whether the gap is due to no existing capability, deficiency in a fielded capability, or an effective capability fielded in insufficient quantities.

A4.3.1. KEY CHARACTERISTICS: If applicable, describe any key characteristics required for the solution and the minimum level of performance for these characteristics. Speed, range, payload, accuracy, reliability, interoperability, and mission availability are examples of characteristics. If multiple characteristics are provided, they should be prioritized based on their value to the warfighter.

A4.3.2. PRIORITY: Describe how this urgent need ranks in priority compared to other urgent needs identified by the commander that have not yet been delivered.

A4.3.3. IMPACT IF CAPABILITY NOT PROVIDED: Discuss the risks to human life and mission success and how these risks will be mitigated if the capability is not provided.

A4.4. CONSTRAINTS. Identify constraints, qualifications, or circumstances that could impact the design or selection of a solution.

A4.4.1. THREAT AND OPERATIONAL ENVIRONMENT. Describe in general terms the operational environment in which the capability will be used and the manner in which it will be employed including any biological, chemical, electromagnetic, or climatological considerations.

A4.4.2. INTEROPERABILITY. Identify and discuss any interoperability considerations for the solution such as systems and interfaces through which it will exchange information. Availability or limitations on command, control, communications and intelligence support; mission planning data: weather, oceanographic and astrogeophysical support should be discussed. Identify any other systems with which the solution must interact.

A4.4.3. TIMEFRAME. Identify the required IOC date. If possible, avoid using terms such as ASAP. If known, identify how long the capability will be needed.

A4.4.4. OTHER CONSTRAINTS. Discuss any other constraints including (but not limited to) arms control treaties; logistics support; life-cycle sustainment issues; transportation availability; manpower; training; human factors; environmental; safety; occupational health hazards; technology protection; system security engineering; and non-military sensitivities.

A4.5. RECOMMENDATIONS. Briefly discuss any materiel or non-materiel solutions considered by the warfighter. If the warfighter has identified a preferred or recommended solution, it should be provided in this paragraph.

A4.6. POINTS OF CONTACT (POCs). Identify the approving commander and one or more POCs that can be contacted regarding this urgent need. Provide name, grade, office symbol, phone number (DSN and/or Commercial) and email address (NIPRNET and SIPRNET).

If classified, include classification source and declassification instructions.