CHAIRMAN OF THE JOINT CHIEFS OF STAFF MANUAL

J-8 CJCSM 3170.01B
DISTRIBUTION: A, B, C, J, S 11 May 2005

OPERATION OF THE JOINT CAPABILITIES INTEGRATION AND DEVELOPMENT SYSTEM

Reference: See Enclosure I

1. Purpose. This manual sets forth guidelines and procedures for operation of the Joint Capabilities Integration and Development System (JCIDS) regarding the development and staffing of JCIDS documents in support of reference a.

2. Cancellation. CJCSM 3170.01A, 12 March 2004, "Operation of the Joint Capabilities Integration and Development System," is cancelled.

3. Applicability. In accordance with references a and b, this manual applies to the Joint Staff, Services, combatant commands, Defense agencies and joint and combined activities. It also applies to other agencies preparing and submitting JCIDS documents in accordance with references a, b and c.

4. Summary. Guidance on the conduct of JCIDS analyses, the development of key performance parameters and the JCIDS staffing process are provided in this manual. It also contains procedures and instructions regarding the staffing and development of joint capabilities documents (JCDs), initial capabilities documents (ICDs), capability development documents (CDDs), capability production documents (CPDs), and joint doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) change recommendations (DCRs).

5. Summary of Changes

a. Additional guidance on the process of identifying and developing key performance parameters (KPPs) has been given. This includes new guidance on linking KPPs to the key characteristics in the Joint Operations Concepts (JOpsC).

b. The JCD has been created to give combatant commands, Functional Capabilities Boards (FCBs) and sponsors a venue to define needed joint capabilities and identify and prioritize joint gaps and redundancies.

c. The process for joint DCR submission, approval and implementation has been incorporated into the JCIDS process.

6. Releasability. This manual is approved for public release; distribution is unlimited. Department of Defense components (to include the combatant commands), other federal agencies and the public may obtain copies of this manual through the Internet from the Chairman of the Joint Chiefs of Staff (CJCS) Directives Home Page--http://www.dtic.mil/cjcs_directives. Copies are also available through the Government Printing Office on the Joint Electronic Library CD-ROM.

7. Effective Date. This manual is effective upon receipt.

For the Chairman of the Joint Chiefs of Staff:

Approved & Secured with ApproveIT by NCR

NORTON A. SCHWARTZ
Lieutenant General, USAF
Director, Joint Staff

Enclosures:
A -- Joint Capabilities Integration and Development System Analysis Process
B -- Performance Attributes and Key Performance Parameters
C – JCIDS Staffing Process
D -- Joint Capabilities Document
E -- Initial Capabilities Document
F -- Capability Development Document
G -- Capability Production Document
H -- Joint DOTMLPF Change Recommendation
I -- References
GL -- Glossary

DISTRIBUTION

Distribution A, B, C and J plus the following:

	Copies
Secretary of Defense	2
Under Secretary of Defense for Acquisition, Technology and Logistics	2
Under Secretary of Defense (Comptroller)	2
Under Secretary of Defense for Personnel and Readiness	2
Under Secretary of Defense for Policy	2
Under Secretary of Defense for Intelligence	2
Assistant Secretary of Defense (Health Affairs)	2
Assistant Secretary of Defense (Networks and Information Integration)	2
Director, Program Analysis and Evaluation	2
Director, Operational Test and Evaluation	2

(INTENTIONALLY BLANK)

LIST OF EFFECTIVE PAGES

The following is a list of effective pages for CJCSM 3170.01B. Use this list to verify the currency and completeness of the document. An "O" indicates a page in the original document.

PAGE	CHANGE	PAGE	CHANGE
1 thru 2	O	F-1 thru F-6	O
i thru viii	O	F-A-1 thru F-A-8	O
A-1 thru A-8	O	G-1 thru G-6	O
B-1 thru B-6	O	G-A-1 thru G-A-8	O
C-1 thru C-12	O	H-1 thru H-8	O
D-1 thru D-4	O	H-A-1 thru H-A-6	O
D-A-1 thru D-A-4	O	I-1 thru I-2	O
E-1 thru E-4	O	GL-1 thru GL-18	O
E-A-1 thru E-A-6	O		

(INTENTIONALLY BLANK)

RECORD OF CHANGES

Change No.	Date of Change	Date Entered	Name of Person Entering Change

(INTENTIONALLY BLANK)

TABLE OF CONTENTS

ENCLOSURE PAGE

A JOINT CAPABILITIES INTEGRATION AND DEVELOPMENT SYSTEM ANALYSIS PROCESS.....A-1

JCIDS Analyses A-1
Functional Area Analysis (FAA) A-1
Functional Needs Analysis A-3
Functional Solution Analysis.....A-4
Post Independent Analysis A-7
Advanced Concept Technology Demonstration (ACTD) and Advanced Technology Demonstration (ATD) Transition A-7

B PERFORMANCE ATTRIBUTES AND KEY PERFORMANCE PARAMETERS.....B-1

Performance Attributes and Key Performance Parameters B-1
Required KPPs B-2
Development of KPPs B-4

C JCIDS STAFFING PROCESS C-1

Process Overview C-1
Certifications C-4
Staffing Process C-6

D JOINT CAPABILITIES DOCUMENT..... D-1

General..... D-1
JCD Focus..... D-1
JCD Development and Documentation..... D-2
JCD Validation and Approval D-3
JCD Publication and Archiving D-3

Appendix A – Joint Capabilities Document Format D-A-1

E INITIAL CAPABILITIES DOCUMENT E-1

General.....E-1
ICD Focus.....E-2

ENCLOSURE PAGE

ICD Development and Documentation....E-3
ICD Validation and Approval....E-3
ICD Publication and Archiving....E-3

Appendix A – Initial Capabilities Document Format.... E-A-1

F CAPABILITY DEVELOPMENT DOCUMENT.... F-1

General.... F-1
CDD Focus.... F-3
CDD Development and Documentation.... F-3
CDD Validation and Approval.... F-4
Certifications.... F-5
Formal CDD Staffing.... F-5
CDD Review and Revalidation.... F-5
CDD Publication and Archiving.... F-5
System Capabilities.... F-5
Key Performance Parameters.... F-6

Appendix A – Capability Development
Document Format....F-A-1

G CAPABILITY PRODUCTION DOCUMENT.... G-1

General.... G-1
CPD Focus.... G-3
CPD Development and Documentation.... G-3
CPD Validation and Approval.... G-4
Certifications.... G-4
Formal CPD Staffing.... G-4
CPD Review and Approval.... G-4
CPD Publication and Archiving.... G-4
System Capabilities.... G-4
Key Performance Parameters.... G-5

Appendix A – Capability Production
Document Format.... G-A-1

H JOINT DOTMLPF CHANGE RECOMMENDATION.... H-1

Purpose.... H-1
Procedures—Integrating Joint DCRs Into the JROC
Process.... H-1

ENCLOSURE PAGE

Formal Change Recommendation Review Process..... H-3
Implementation of Joint DCRs H-4

Appendix A – Joint DOTMLPF Change
Recommendation Format H-A-1

I REFERENCES I-1

GLOSSARY GL-1
Part I – Acronyms.....GL-1
Part II – Definitions GL-5

FIGURE

A-1 JCIDS Analyses.....A-2
B-1 CDD and CPD Attributes.....B-5
C-1 Gatekeeping Process.....C-1
C-2 JROC Interest Staffing Process C-7
C-3 JROC Interest Validation and Approval C-9
C-4 Joint Integration and Independent Staffing Process C-10
H-1 Joint Staff DOTMLPF FPOs H-5

TABLE

C-1 Staffing Matrix C-4
D-1 JCD Linkage to Program Documents D-2
E-1 ICD Linkage to Program Documents E-1
F-1 CDD Linkage to Program Documents.....F-2
G-1 CPD Linkage to Program Documents G-2

(INTENTIONALLY BLANK)

ENCLOSURE A

JOINT CAPABILITIES INTEGRATION AND DEVELOPMENT SYSTEM ANALYSIS PROCESS

1. JCIDS Analyses. The JCIDS analysis process is a capabilities-based assessment (CBA) composed of a structured, four-step methodology that defines capability gaps, capability needs and approaches to provide those capabilities within a specified functional or operational area. Based on national defense policy and centered on a common joint warfighting construct, the analyses initiate the development of integrated, joint capabilities from a common understanding of existing joint force operations and DOTMLPF capabilities and deficiencies. While a JCIDS analysis may be initiated by any number of organizations, to include combatant commanders and FCBs, a sponsor needs to be brought into the analysis as early as possible. The term "sponsor," as used in this document, is the DOD component, domain owner or other organization responsible for all common documentation, periodic reporting and funding actions required to support the JCIDS process and acquisition activities carried out in accordance with references b and c (e.g., Services, agencies, principal staff assistants). The sponsors must collaborate with the combatant commands and FCBs to ensure capabilities are defined from a joint perspective. The analysis is based on the Family of Joint Future Concepts (reference d). The resulting analysis also forms the foundation for integrated architectures that are developed to structure solutions to capability needs. The assistance and advice of appropriate FCB working groups should be solicited as early as possible during analysis to facilitate the collaborative effort across many organizations. The sponsor-initiated JCIDS analyses provide the necessary information for the development of ICDs and joint DCRs. The FCBs will provide oversight and assessment of the analysis as appropriate to ensure it is accomplished from a joint perspective. Figure A-1 depicts the JCIDS analysis process.

2. Functional Area Analysis (FAA). The first step in the JCIDS analysis begins when the combatant command, FCB or sponsor leads performance of an FAA. The FAA can be self-initiated by a sponsor or combatant command based upon an approved concept of operations (CONOPS). The FAA may also be initiated at Joint Requirements Oversight Council (JROC) direction based upon the Family of Joint Future Concepts. An FAA identifies the operational tasks, conditions and standards needed to achieve the desired outcomes for the military objectives. It uses, as input, the national strategies, the Family of Joint Future Concepts, CONOPS, joint tasks, the capabilities list (e.g., Universal Joint Task List (UJTL)), the anticipated range of broad capabilities that adversaries might employ and other sources.

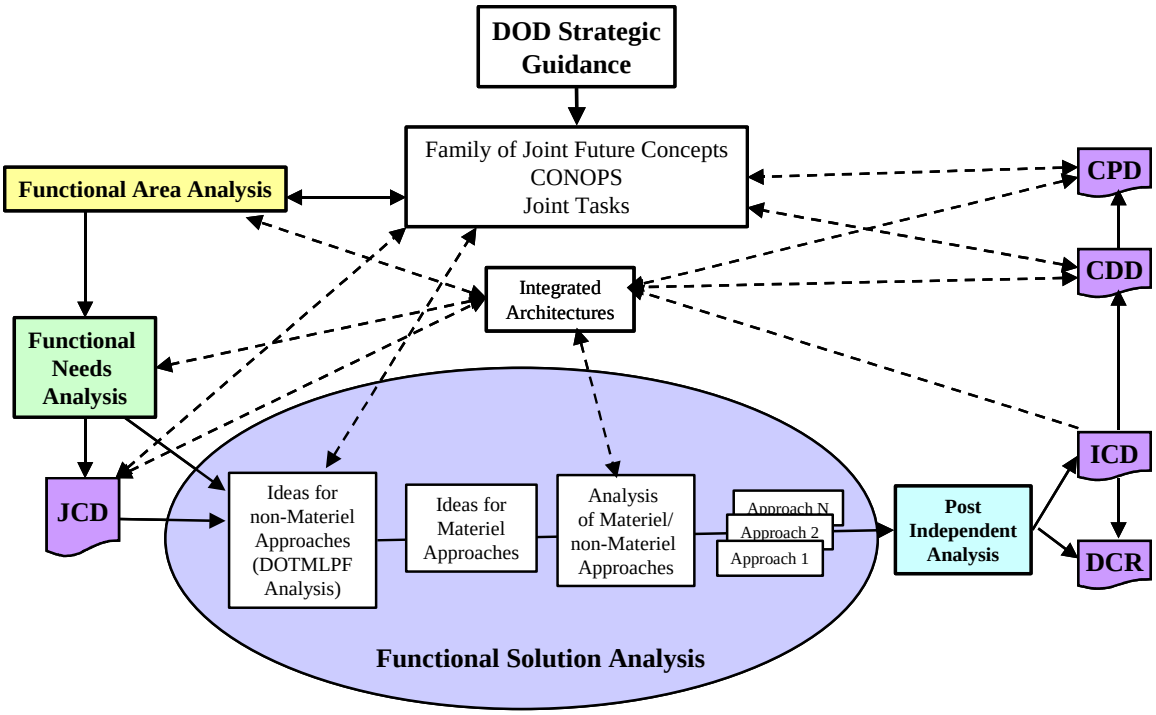

Figure A-1. JCIDS Analyses

a. The Family of Joint Future Concepts and other sources provide a list of capabilities and associated operational conditions (reference d). The FAA identifies the scenarios against which the capabilities and attributes will be assessed. Scenario sources include, but are not limited to, the Defense Planning Scenarios (DPS) published by OSD. This capabilities list is then scoped in order to make the analysis conducted during the FAA manageable.

b. The output of the FAA is the list of capabilities and their associated tasks and attributes. The tasks, conditions and standards are developed to the level required for analysis in the follow-on functional needs analysis (FNA). The capabilities will be linked to the key characteristics defined in the JOpsC. The FAA includes cross-capability and cross-functional analysis in identifying operational tasks, conditions and standards and for the basis to develop integrated architectures. The FAA should be conducted as a collaborative effort with input from the combatant commands, FCBs, Services and agencies.

c. The operational tasks should be submitted to the Defense Intelligence Agency (DIA) to enable production of an Initial Threat Warning Assessment (ITWA). The ITWA will identify adversarial capabilities that could specifically affect a capability being identified.

d. Contact the DIA Defense Warning Office, Acquisition Support Division for assistance (DSN 428-4526):

(1) JWICS: http://www.dia.ic.gov/homepage/homepages/ta2/homepage.htm

(2) SIPRNET: http://www.delphi-s.dia.smil.mil/intel/j2/j2p/irco/main.html

3. Functional Needs Analysis. The FNA is the second step of the JCIDS analysis process. The combatant command, FCB or sponsor performs the FNA following the FAA. While it may be lead by a sponsor, the FNA should always be a joint collaborative effort to include the combatant commands, FCBs and other Services and agencies, as appropriate, to ensure a joint analysis of capabilities and determination of gaps. The FNA assesses the ability of the current and programmed joint capabilities to accomplish the tasks, under the full range of operating conditions and to the designated standards, that the FAA identified and serves to further define and refine the integrated architectures. Using the tasks identified in the FAA as primary input, the FNA produces a list of capability gaps that require solutions, and indicates the time frame in which those solutions are needed. The FNA should accomplish the following:

a. Describe the capability gap, overlap or problem in operational and/or broad effects-based terms by extrapolating operational capabilities and functions desired and comparing them to current operational capabilities and functions based on current DOTMLPF solutions, analyzing gaps and/or overlaps and potential causes. It will include consideration of gaps or problems identified in combatant commander issues and integrated priority lists. It will provide a recommended priority of the gaps. Future adversarial threat capabilities and scientific and technological developments as depicted in the ITWA will be considered.

b. Describe the applicable joint mission thread between functional areas as they pertain to gaps, overlaps and risk areas and the current or future capabilities they affect.

c. Describe the key attributes of a capability or capabilities that would resolve the issue in terms of purpose, tasks and conditions. This description should address the elements of time, distance, effects and obstacles to overcome. Link the discussion to the UJTL, adjusting for situations not covered within the UJTL. These descriptions of the tasks, conditions and standards will enable the development of measures of effectiveness (MOEs).

d. Identify functional area metrics that the proposed capability improves or degrades, and develop appropriate MOEs. The FNA will use these MOEs to evaluate how well current or programmed capabilities are able to accomplish the specific tasks. Use of the MOEs for the assessment is a key component in determining the existence of a gap and evaluation of proposed solutions, and

will support development of the KPPs. When possible, use the MOEs integrated with other forms of assessment such as modeling and simulation, high resolution planning, wargaming, etc., to develop a clearer picture of the gap, its significant factors and its relative importance.

e. Combatant commands and FCBs should document the results of their analysis in a JCD at the conclusion of the FAA and FNA. Combat support agencies with designated functional management roles may develop JCDs based on their assigned functional roles and missions. A sponsor may also elect to submit a JCD to the JROC for validation and approval prior to proceeding into the functional solution analysis (FSA) if the capabilities described impact on joint warfighting. The sponsor will coordinate with the appropriate FCB to determine if this additional approval is required before proceeding or soliciting a FSA from a different potential sponsor.

4. Functional Solution Analysis. The FSA is the third step of the JCIDS analysis process. The sponsor leads the FSA with support from the combatant commands and oversight by the FCBs. It is an operationally based joint assessment of potential DOTMLPF and policy approaches to solving (or mitigating) one or more of the capability gaps identified in the FNA. The gaps identified in the FNA are inputs to the FSA. Applicable integrated architectures shall be considered in the development of the FSA. FSA outputs will identify potential approaches to resolve identified capability gaps. In considering these approaches, the following order of priority should be used: changes to the existing DOTMLPF and/or policy approach; product improvements to existing materiel or facilities alone; adoption of interagency or foreign materiel approaches that have limited non-materiel DOTMLPF and/or policy consequences; and new materiel starts. The approaches identified should include the broadest possible range of joint and independent possibilities for solving the capability gap. The results of the FSA will be evaluated in the post independent analysis (PIA) and will also influence the future direction of integrated architectures and provide input to capability roadmaps.

a. Ideas for non-Materiel Approaches (DOTMLPF Analysis). An FSA begins with determining whether a non-materiel or integrated DOTMLPF and/or policy approach (including human systems integration (HSI) considerations) can fill the capability gaps identified in the FNA.

(1) If the sponsor determines that the capability gap(s) can be partially addressed by integrated DOTMLPF and/or policy approaches, the sponsor will assess them in conjunction with the potential materiel approaches. If this approach is recommended for implementation, the sponsor will develop a joint DCR in addition to required CDDs or CPDs.

(2) If the sponsor determines that the capability gap(s) can be completely addressed by a joint non-materiel approach, the sponsor will develop a joint DCR in lieu of completing the ICD.

b. Ideas for Materiel Approaches. The expertise of the entire Department of Defense and other resources should be engaged to identify joint materiel approaches that can provide the required capabilities. The collaborative nature of this effort is meant to develop potential approaches in an integrated fashion that reflect the future requirements of joint force commanders. The approaches may include family of systems (FoS) or system of systems (SoS) that take different approaches to filling the capability gap, each addressing operational considerations and compromises in a different way. The process should leverage the expertise of all government agencies, as well as industry, in identifying possible materiel approaches. Existing and future materiel programs that can be modified to meet the capability need and capability roadmaps that depict projected materiel solutions should always be considered. The process should identify technologies that, if matured, would provide a more effective approach in the future. The integrated DOTMLPF and policy implications of any proposed materiel approach will always be considered throughout the process. For each approach that involves a new materiel concept or a modification of a planned or existing materiel program, the description of the approach should not define which specific "systems" or "system components" should be used. For example, the description of an approach to achieve a desired capability can simply be "use an unmanned aerial vehicle (UAV) with a bomb". It is not necessary to define which UAV or which bomb should be used. That analysis will occur in an analysis of alternatives (AoA) after the ICD is approved.

c. Analysis of Materiel/Non-Materiel Approaches (AMA). The AMA will determine which approach or combination of approaches may provide the desired capability or capabilities. The AMA will also determine how the approaches align with current integrated architectures and current and/or planned capabilities, and identify potential changes to integrated architectures to document the capability. MOEs used during the FNA should be used during the FSA to evaluate potential materiel and non-materiel approaches.

(1) The sponsor will collate the information obtained during the FAA, the FNA, the non-materiel approaches (DOTMLPF analysis) and the ideas for materiel approaches. At this point, a number of approaches may be available to provide the desired capabilities. The sponsor, with support from the Joint Staff/J-8 Capabilities and Acquisition Division (CAD) and the appropriate FCB working groups, will determine whether to submit the information to an appropriate research agency for independent analysis or to conduct the AMA itself. An independent analysis may be required to provide an objective review that serves the capability needs of the joint force.

(2) The AMA will consider the capability gap, the specified range of military operations, the conditions under which they must be performed and other factors that are relevant to support the Family of Joint Future Concepts and CONOPS and complying with applicable US-ratified international standardization agreements (reference e) based on analysis of integrated architectures.

(3) The AMA will determine how well the proposed approaches address the identified capability gaps and provide the desired effects. The approaches shall include the integrated DOTMLPF or policy changes necessary to meld the FoS and SoS into an effective capability. The FoS and SoS materiel approaches may require systems delivered by multiple sponsors and materiel developers.

(4) The product of the AMA is a list of materiel and non-materiel approaches (or combinations of approaches) and their associated DOTMLPF or policy implications evaluated against the metrics identified in the FNA. The analysis will consider technological maturity, technological risk, supportability, survivability and the affordability of each approach using the best data available in the pre-ICD process. The AMA will also assess the operational risk associated with each approach. It will consider the integrated DOTMLPF and policy implications of each materiel approach, to the extent that those implications can be identified. Finally, it will consider the overall impact of the approaches on the functional and cross-functional areas. The AMA must:

(a) Confirm the nature of the capability or broad-based effect(s) to be provided, when the capability is required and the applicable operational environment. This capability confirmation must include a rough assessment of the sustainability and/or supportability of the end item system or SoS.

(b) Examine the ability of the identified ideas for approaches to provide the desired capability or capabilities under the conditions specified.

(c) For non-materiel approaches, evaluate the ability of the approach to deliver the total capability. If it cannot deliver the total capability, evaluate how much of the capability can be met.

(d) Identify the combination of non-materiel approaches and new materiel programs that can be used to deliver the required capability.

(e) Evaluate the delivery time frame for each approach to determine when a useful capability could be delivered to the warfighter.

1. For approaches that use existing capabilities or capabilities that are already scheduled for delivery, examine how the delivery of the proposed capability ties into the existing program.

2. For new materiel approaches, evaluate when a useful capability could be delivered to the warfighter through the use of existing technology.

3. For approaches based on FoS and SoS solutions, evaluate the necessity to synchronize the development of systems and integrated DOTMLPF and policy considerations across sponsors and materiel developers.

4. Evaluate when a new or increased capability could be delivered by bringing together existing or new systems in new ways.

(f) Evaluate the relative improvement in capability provided by the approaches as compared to the existing capability.

(g) Evaluate the cost to develop, procure and sustain the approaches versus the cost to sustain the existing capability.

(h) Examine additional approaches, as required. Conduct market research to determine if commercial items or non-developmental items are available to meet the desired capability, or could be modified to meet the desired capability. If market research indicates commercial or non-developmental items are not available to satisfy the need, re-evaluate the need and determine whether it can be restated to permit commercial or non-developmental items to satisfy the required capability.

5. Post Independent Analysis. The final step in the JCIDS analysis process is the PIA. In this step, the sponsor will assess the compiled information and analysis results of the FSA (non-materiel and materiel approaches) to ensure the list of approaches with the potential to deliver the capability identified in the FAA and FNA is complete. The sponsor team performing the PIA shall be made up of individuals who were not involved in the FSA. This information will be compiled into an appropriate recommendation and documented in an ICD or joint DCR.

6. Advanced Concept Technology Demonstration (ACTD) and Advanced Technology Demonstration (ATD) Transition. The military utility assessment (MUA), which is completed at the end of the ACTD or ATD, may be a suitable replacement for the required analysis used as the basis for ICD preparation. The MUA will be used to guide the development of the CPD for JROC approval. A CDD or CPD, as appropriate, will be developed for the ACTD or ATD to transition into an acquisition program.

(INTENTIONALLY BLANK)

ENCLOSURE B

PERFORMANCE ATTRIBUTES AND KEY PERFORMANCE PARAMETERS

1. Performance Attributes and Key Performance Parameters. The CDD and CPD state the operational and support-related performance attributes of a system(s) that provides the capabilities required by the warfighter – attributes so significant they must be verified by testing and evaluation or analysis. KPPs are those attributes or characteristics of a system that are considered critical or essential to the development of an effective military capability and those attributes that make a significant contribution to the key characteristics as defined in the JOpsC. The CDD and CPD identify the attributes that contribute most significantly to the desired operational capability in threshold-objective format. Whenever possible, attributes should be stated in terms that reflect the range of military operations that the capabilities must support and the environment intended for the system (FoS or SoS). There are other types of compatibility and interoperability attributes (e.g., databases, fuel, transportability, ammunition) that might need to be identified for a capability. These statements will guide the acquisition community in making tradeoff decisions between the threshold and objective values of the stated attributes. Operational testing will assess the ability of the system(s) to meet the production threshold values as defined by the KPPs and other performance attributes.

a. Each attribute will be supported by an operationally oriented analysis to determine threshold and objective values. Below the threshold value, the military utility of the system(s) becomes questionable. In an evolutionary acquisition, it is expected that threshold values will generally improve between increments. Different attributes may come into play as follow-on increments deliver additional capability. An attribute may apply to more than one increment. The threshold and objective values of an attribute may differ in each increment. DOD components will, at a minimum, budget to achieve all stated thresholds.

b. The threshold value for an attribute is the minimum acceptable value considered achievable within the available cost, schedule and technology at low to moderate risk. Performance below the threshold value is not operationally effective or suitable. The objective value for an attribute is the desired operational goal achievable but at higher risk in cost, schedule and technology. Performance above the objective does not justify additional expense. The difference between threshold and objective values sets the trade space for meeting the thresholds of multiple KPPs. Advances in technology or changes in joint concepts may result in changes to threshold and objective values in future increments.

c. The attributes and their supporting rationale should reflect analytical insights identified by the CBA used to develop an ICD. The attributes should be directly related to the measures of effectiveness related to the capability as defined in the ICD. As a minimum, supporting analyses must include: the AoA for potential acquisition category (ACAT) I programs and other programs as directed by the milestone decision authority (MDA); the cost-schedule-performance tradeoffs analysis; the capability cost tradeoffs analysis; the results of experimentation, testing and evaluation; the life-cycle supportability and affordability analysis; lessons learned during the system development and demonstration (SDD) phase; and user feedback on fielded production increments.

d. KPPs are those system attributes considered most critical or essential for an effective military capability. The CDD and the CPD generally contain sufficient KPPs to capture the minimum operational effectiveness, suitability and supportability attributes needed to achieve the overall desired capabilities for the system (or systems if the CDD/CPD describes a SoS) during the applicable increment. Failure to meet a CDD or CPD KPP threshold may result in a reevaluation or reassessment of the program or a modification of the production increments.

2. Required KPPs

a. KPPs Traceable to the JOpsC. All systems will have KPPs that can be traced back through the ICD to those JOpsC key characteristics to which the proposed system makes a significant contribution. These attributes will be designated as KPPs and have threshold and objective values defining the system's contribution to those key characteristics of the joint force. Guidelines for identifying the JopsC-derived KPPs are:

(1) Based on the primary mission of the system, does it contribute to one or more of the JOpsC key characteristics? For example, a bomber could contribute to multiple key characteristics: expeditionary, adaptable and enduring/persistent; and an unmanned aerial vehicle could contribute to knowledge empowered, networked and enduring/persistent.

(2) Does the system have other attributes that contribute significantly to any of the JOpsC key characteristics? For example, the tactical data link on a fighter may contribute to the overall networked characteristic in addition to the primary mission of the fighter.

(3) If the answer is yes to either of the above, designate at least one (if not more) attributes as a KPP for each relevant key characteristic. It is not necessary to designate as a KPP every attribute associated with a particular key characteristic, only those most essential to the capability. In the case of

the bomber, while it may have attributes related to range, payload, etc, range may be the one most essential to the expeditionary characteristic.

b. Net-Ready KPP. A net-ready KPP (NR-KPP) will be developed for all information technology (IT) and National Security Systems (NSS) used to enter, process, store, display or transmit DOD information, regardless of classification or sensitivity. Exceptions are those systems that do not communicate with external ones, including Automated Information Systems in accordance with references f, g, and h.

(1) IT and NSS interoperability is defined in reference f as 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 the technical exchange of information and the end-to-end operational effectiveness of that exchange as required for mission accomplishment. A NR-KPP is based on the information exchange of the proposed system(s) and is derived from integrated architectures, whenever possible, as defined in references f and i.

(2) The NR-KPP should reflect the information needs of the capability under consideration and the needs of appropriate supported systems. It should cover all communication, computing and electromagnetic spectrum (reference j) requirements involving the exchange of products and services between producer, sender, receiver and consumer for the successful completion of the warfighter mission, business process or transaction. It will also identify all applicable standards the system will use to make data visible, accessible and understandable to other information producers and consumers on the Global Information Grid (GIG). An embedded training will be considered as the first alternative for operators and maintainers to optimize use of the operational systems and interface with the distributed networks. Systems will be able to operate and train in peacetime within national and regional radio spectrum regulations. These products and services include any geospatial intelligence and environmental support the system(s) needs to meet operational capabilities. The NR-KPP identified in CDDs and CPDs will be used in the information support plan (ISP) (see references g and k) to identify support required from outside the program.

(3) Information assurance (IA) capabilities must be developed and integrated with capabilities for interoperability for any system(s) considered an asset of the GIG. Reference k provides the guiding policy for the GIG and systems that use it. IA is defined as the information operation that protects and defends information and information systems by ensuring their availability, integrity, authentication, confidentiality and non-repudiation. It includes restoration through protection, detection and reaction capabilities. IA capabilities apply to all DOD systems that are used to enter, process, store,

display or transmit DOD information, regardless of classification or sensitivity, except those that do not communicate with external systems.

3. Development of KPPs

a. The following questions should be answered in the affirmative before a performance attribute is selected as a KPP:

(1) Is the attribute a necessary component of the required KPPs (statutory, JOpsC or net-ready) or is it essential for defining the required capabilities?

(2) Does it contribute to significant improvement in warfighting capabilities, operational effectiveness and/or operational suitability?

(3) Is it achievable and affordable (total life cycle costs)?

(4) Is it measurable and testable?

(5) Are the definition of the attribute and the recommended threshold and objective values supported by analysis?

(6) Is the sponsor willing to consider restructuring the program if the attribute is not met?

b. A KPP will normally be a rollup of a number of supporting attributes that may be traded off to deliver the overall performance required. The following is one methodology for developing KPPs:

(1) Step 1: List required capabilities for each mission or function as described in the proposed CDD or CPD. This review should include all requirements the system described in the CDD/CPD is projected to meet, including those related to other systems in a FoS or SoS context. It shall also include all relevant performance metrics identified in ICDs for which the CDD/CPD is providing a capability.

(2) Step 2: Prioritize these capabilities.

(3) Step 3: For each mission or function, build at least one measurable performance attribute.

(4) Step 4: Determine the attributes that are most critical or essential to the system(s) and designate them as KPPs. (Note: A KPP need not be created for all missions and functions for the system(s). In contrast, certain missions and functions may require two or more KPPs.)

(5) Step 5: Document how the KPPs are responsive to the performance attributes identified in the ICDs and integrated architectures.

c. Threshold and objective values of an attribute may change between the CDD and the CPD. The CDD attribute values are used to guide the acquisition community during SDD (see reference c for acquisition phases for DOD space programs). Threshold values should be based on what is achievable through the current state of technology as a minimum. The objective values may be defined based on a goal for the end-state of the system. During SDD, tradeoffs are made between the threshold and objective values to optimize performance, given the available technology for the increment and the competing demands introduced by combining subsystems into the overall system. After the design readiness review, these tradeoff decisions are essentially completed and a more precise determination of acceptable performance can be stated in the CPD.

(1) Figure B-1 (a) shows an attribute (A) of a system with threshold and objective values (1 and 10, respectively) determined during technology development and presented in the CDD. During SDD, optimum performance values may be developed for each attribute (or some attributes) on the basis of cost, performance or other considerations, as shown in Figure B-1 (b).

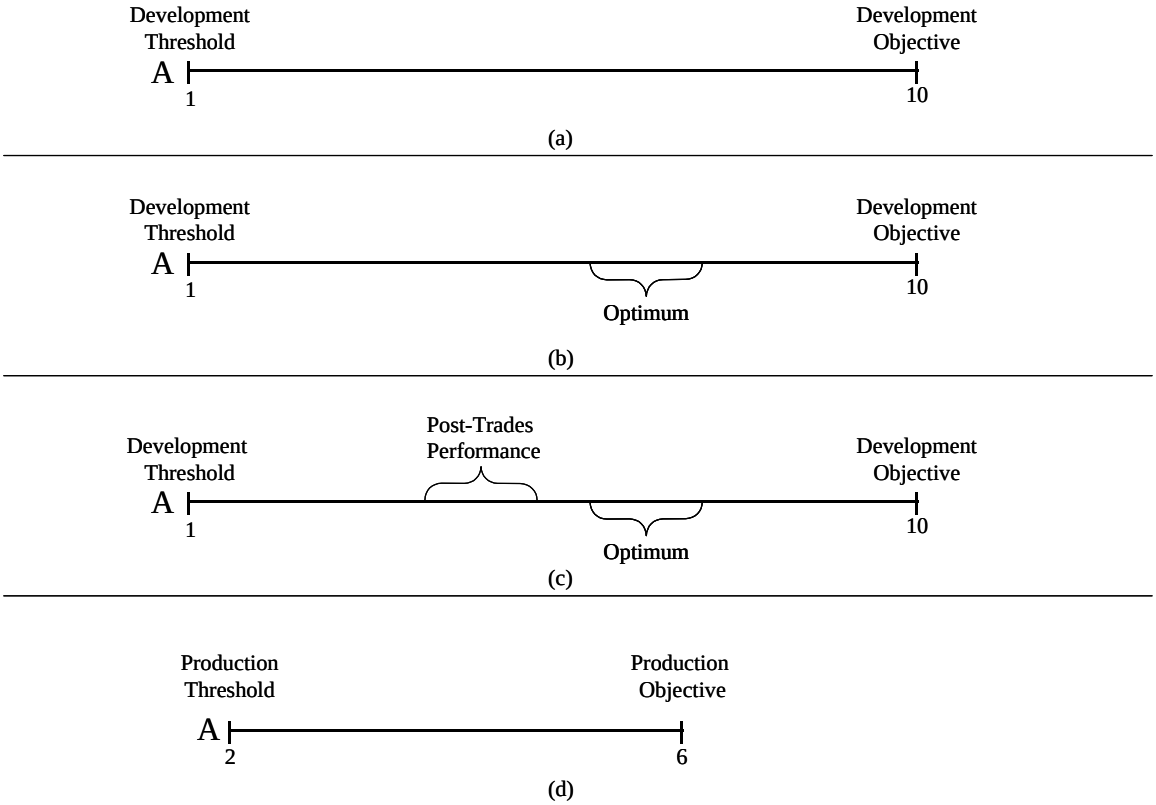

Figure B-1 (a), (b), (c) & (d). CDD and CPD Attributes

(2) Further design tradeoffs among the collective attributes may necessitate settling for design performance values different from the optimum values for the individual attributes. The design performance values may be higher or lower than the optimum values. Figure B-1 (c) shows an example in

which optimum performance was traded off because of other considerations, resulting in reduced performance within attribute A.

(3) The production threshold and objective values specified for the attribute in the CPD will be a refined version of the development threshold and objective values documented in the CDD. Figure B-1 (d) shows an example of the revised performance attributes that would be included in the CPD. Each production threshold value should be determined on the basis of manufacturing risk and risk imposed by other related attributes. KPP and non-KPP threshold values in the CPD should be equal to or better than the corresponding CDD threshold values. There may be cases, however, where CDD KPP and/or non-KPP threshold values are reduced in a CPD. When this occurs, the following questions must be answered in the CPD:

(a) Will the capability still provide sufficient military utility?

(b) If the new capability will replace a fielded capability, will it still provide more overall military utility than the fielded capability?

(c) Is this capability still a good way to close the capability gap or should another materiel or non-materiel alternative approach be pursued?

(d) Is the reduced capability worth the costs incurred to date and any additional investments required?

(4) When a CDD KPP threshold is lowered in a CPD, the validating authority must validate and approve the change.

(5) For an early increment in an evolutionary acquisition, the production objective value for the increment could be less than the development objective value.

ENCLOSURE C

JCIDS STAFFING PROCESS

1. Process Overview

a. The process of obtaining validation and approval of JCIDS documents begins with the submission of a document to the Knowledge Management/Decision Support (KM/DS) tool (see Figure C-1). Staffing continues until the document is validated and approved. The KM/DS tool will be used by DOD components to submit documents and comments for O-6 and flag reviews, search for historical information, and track the status of documents. The KM/DS tool may be found on https://jrockmds1.js.smil.mil/guestjrcz/gbase.guesthome.

b. Services and other organizations conducting JCIDS analyses may generate ideas, the Family of Joint Future Concepts, and CONOPS leading to JCDs, ICDs, CDDs, CPDs and joint DCRs. JCIDS initiatives may also be generated as a result of analyses directed or conducted by an FCB. As the initiative develops into proposed DOTMLPF or materiel approaches to provide desired capabilities, an FCB may request that a Service or component sponsor the initiative. Further proposal development would then become the responsibility of the sponsor.

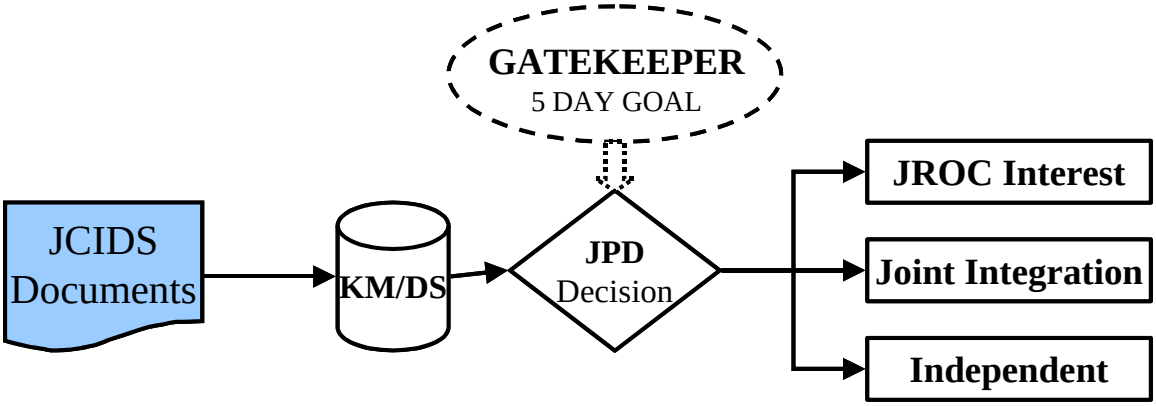

Figure C-1. Gatekeeping Process

(1) Document Submission. All JCIDS documents (JCDs, ICDs, CDDs, CPDs and joint DCRs) will be entered in the KM/DS tool by the sponsor. The document will be subjected to DOD component O-6 level staffing and coordination. The document will be forwarded through KM/DS, identifying the document, date, any schedule drivers, classification and working-level points of contact. An executive summary of the analysis supporting the development of the document and the specific analysis used in the determination of CDD and CPD KPPs also will be provided with the draft document. All documents will be

signed out by the sponsoring organization at the 3-star level (or equivalent capability oversight council) as a minimum prior to presentation to the JROC through the Joint Capabilities Board (JCB) for validation and approval. All documents undergoing the review process are considered draft until after JROC validation and/or approval, as appropriate.

(a) Format. The submission will be an electronic copy in Microsoft Word version 6.0 or higher.

(b) Documents classified SECRET and below transmitted electronically and retained as a permanent JCIDS record must be accurately and completely marked in accordance with reference l.

(c) Documents for highly sensitive classified programs will be transmitted in a hard copy form to the Joint Staff/J-8, Capabilities and Acquisition Division (CAD), in accordance with appropriate classification guidelines and handling procedures. For TOP SECRET and SCI documents, a placeholder record will be placed into KM/DS with instructions on document location. Special access documents will not be recorded in KM/DS. Approved documents will be retained in accordance with storage and handling procedures for each program.

(2) Submission of the document to the KM/DS tool will trigger the gatekeeper process to determine whether the document has joint implications or is component-unique.

c. The Gatekeeper. The Vice Director, Joint Staff/J-8, is the Gatekeeper of the JCIDS process. With the assistance of USJFCOM, FCB working group leads, Joint Staff/J-7, Joint Staff/J-8 CAD, and J-6I Integration and Information Assurance Division, the Gatekeeper will evaluate all JCIDS documents.

(1) JCIDS documents will be submitted for Gatekeeper review to determine whether the proposal affects the joint force. The Gatekeeper will review each document upon initial submission, regardless of ACAT, previous delegation decisions or previous joint potential designator (JPD) decisions. This designation will not be revisited for subsequent submission of the same document unless a recommendation for change is made by the lead FCB or the document sponsor makes a request for reassessment. The Gatekeeper will use the JPD assigned to a predecessor document in the determination of the new JPD.

(2) Based on the content of the submission, the Gatekeeper will assign a JPD of “JROC Interest,” “Joint Integration” or “Independent” to the JCIDS document. The Gatekeeper will then assign it to a lead FCB for further assessment and may designate other FCBs to support the process.

(a) The JROC Interest designation will apply to all ACAT I/IA programs as well as ACAT II and below programs where the capabilities have a significant impact on joint warfighting or a potential impact across Services. All JCDs and joint DCRs will be designated JROC Interest. This designation may apply to intelligence capabilities that support DOD and national intelligence requirements. All JROC Interest documents will receive threat validation, IT and NSS interoperability and supportability (references f, g and h), intelligence and/or insensitive munitions certifications as required. An exception may be made for ACAT IAM programs without significant impact on joint warfighting (i.e., business oriented systems). The Gatekeeper may designate these programs either as Joint Integration or Independent. JROC Interest documents will be staffed through the JROC for validation and approval.

(b) The Joint Integration designation will apply to ACAT II and below programs in which the concepts and/or systems associated with the document do not significantly affect the joint force and for which an expanded review is not required, but staffing is required for threat validation and applicable certifications (IT and NSS interoperability and supportability (references f, g, and h), intelligence and/or insensitive munitions). Once the required certifications are completed, the proposal may be reviewed by the FCB. Joint Integration documents are validated and approved by the sponsoring component.

(c) The Independent designation will apply to ACAT II and below programs in which the concepts and/or systems associated with the document do not significantly affect the joint force, an expanded review is not required and no certifications are required. Once designated Independent, the FCB may review the proposal. These documents are returned to the sponsoring component for validation and approval.

(3) Using the KM/DS tool, the Joint Staff/J-8 will maintain a database of JCIDS documents processed through the gatekeeper function. The database will include the JPD, the FCBs having equity in the proposal and the lead FCB for the proposal. The database will help the Gatekeeper ensure consistency of staffing as JCIDS proposals progress through the JCIDS process.

(4) Once the JPD has been assigned, the document will move into the staffing and approval process. Table C-1 lists the organizations that will typically be asked to staff and comment on any JCIDS document based on the assigned JPD. Acquisition community review will be included in the staffing of any JROC Interest or Joint Integration proposal.

Office	JROC Interest	Joint Integration	Independent
Army	X	X	S
Navy	X	X	S
Air Force	X	X	S
Marine Corps	X	X	S
Joint Staff	X/C	C	
FCB Working Groups	L/S	L/S	L/S
Combatant Commanders	X	X	S
Other DOD Components	X	X	X
USD(AT&L)	X	X	
USD(I)	X	X	
USecAF (DOD EA for Space)	X	X	S
ASD(NII)/DOD CIO	X	X	
USD(P&R)	X	X	
USD(C)	X	X	
DOT&E	X	X	
Director, PA&E	X	X	
DIA	X	X	
DISA	X	X	S
NGA	X	X	S
NSA	X	X	S
NRO	X	X	S
MRB	X	X	

L/S = lead/supporting FCB
S = Sponsor staffing only
X = Required staffing
C = Certification

Table C-1. Staffing Matrix

2. Certifications. Applicable certifications will be processed as part of the staffing process for each JCIDS document. If a certification authority determines the content is insufficient to support a required certification, it is the sponsor's responsibility to resolve the issue with the certification authority.

If resolution cannot be achieved, the sponsor may request review of the issue by higher authority as described below.

a. Threat Validation and Intelligence Certification – (Joint Staff/J-2)

(1) Threat Validation. For all JROC Interest and Joint Integration JCDs, ICDs, CDDs and CPDs, the DIA will provide validation of threat information appropriate to the proposal through the intelligence certification process in accordance with reference m. DOD components may validate intelligence information for programs designated as Independent proposals using DIA-validated threat data and/or data contained in DOD Service Intelligence Production Program products and data.

(2) Intelligence Certification. Joint Staff/J-2 will provide intelligence certification in accordance with reference m as part of the JCIDS staffing of JCDs, ICDs, CDDs and CPDs, regardless of ACAT level, unless a waiver has been granted by Joint Staff/J-2. It will assess intelligence support needs for completeness, supportability and impact on joint intelligence strategy, policy and architectural planning as outlined in reference m. The Joint Staff/J-2 certification will also evaluate intelligence-related information systems with respect to security and intelligence interoperability standards.

(3) Unresolved Intelligence Issues. Unresolved intelligence issues will be brought to the attention of the appropriate FCB(s), in accordance with reference m procedures.

(4) Information Support Plans. Joint Staff/J-2 will assess the intelligence needs, deficiencies and solutions documented in the ISPs in accordance with references g, k and m.

b. Insensitive Munitions (IM) Certifications and Waivers – (Joint Staff/J-8, Deputy Director for Force Protection (DDFP)). An IM certification or an IM waiver must accompany any munitions program CDD or CPD to the JCB and JROC.

(1) Insensitive Munitions. The Joint Staff/J-8 DDFP will certify that all CDDs and CPDs for munitions, regardless of ACAT level, comply with the IM (unplanned stimuli) criteria (reference n). At a minimum, these CDDs and CPDs will contain the statement, "Munitions used in this system will be designed to resist insensitive munitions threats (unplanned stimuli)." The Joint Service Insensitive Munitions Technical Panel (JSIMTP) will assess the compliance of the munitions. The JSIMTP will provide a recommendation to the DDFP as an input to the certification decision. The sponsor will coordinate with the DDFP for a decision on IM certification.

(2) IM Waiver Requests. Munitions not certified by the DDFP as IM compliant or represented by the sponsor as IM non-compliant will pursue an

IM waiver of the requirements. IM waiver requests require approval by the JROC. IM waiver requests shall include a component- or agency-approved IM plan of action and milestones to identify how future purchases of the same system or future system variants will achieve incremental and full compliance. Waiver requests will be submitted to the Joint Staff/J-4 for staffing with the JSIMTP, USD(AT&L) and Services for review and then forwarded to the JROC Secretariat in parallel with JCIDS staffing through KM/DS of the CDD/CPD. A request for IM waiver will be brought to the DDFP through the appropriate FCB. The FCB will evaluate the waiver request and the DDFP will recommend approval or disapproval to the JROC.

c. IT and NSS Interoperability and Supportability Requirements Certification – (Joint Staff/J-6)

(1) Certify all CDDs and CPDs designated as JROC Interest or Joint Integration for conformance with joint IT and NSS policy.

(2) Certify compliance with integrated architectures, interoperability standards and net-centric data sharing in accordance with references f, g, h and o.

(3) Review and comment on the IT and NSS NR-KPP.

(4) Coordinate IT and NSS issues concerning JCIDS documents with the appropriate agencies, in accordance with reference h and as directed by references f and g.

(5) Certify the IT and NSS interoperability and supportability requirements in the CDD and CPD in accordance with reference h.

(6) Forward the IT and NSS interoperability certification to the FCB (for programs designated as JROC Interest) or to the sponsoring DOD component (for other programs).

(7) Forward unresolved interoperability issues to the Military Communications Electronics Board (MCEB) for resolution. The MCEB will ensure that issues resulting from unresolved interoperability assessments are delivered to the FCB, reviewed by the DOD Chief Information Officer (CIO) and presented to the JROC for resolution, regardless of the document's JPD.

3. Staffing Process. The Joint Staff/J-8 CAD will staff all JROC Interest proposals before FCB review and Joint Integration proposals for certification, as depicted in Table C-1 and Figure C-2. Concurrent staffing of ICDs, CDDs and CPDs is not permitted. If an ICD is required, it must complete flag staffing and comment resolution before any CDDs, CPDs or joint DCRs that refer to that ICD can be submitted for staffing. The same rule applies for CDDs prior to CPD staffing. During the review process, the FCB working groups will

evaluate how well the proposed approaches documented in an ICD (and solutions identified in a CDD, CPD or joint DCR) addressed the capability gaps identified in the JCIDS analyses. This process will include O-6- and flag-level reviews.

a. O-6 Review. Joint Staff/J-8 CAD will review and verify the document's format for accuracy and completeness. For O-6 level review, J-8 will distribute the draft document using the KM/DS tool after the Gatekeeper assigns a JPD and lead and supporting FCBs. The suspense date will normally be 25 calendar days from the transmittal date. This review will include the Stage I initial threat validation and intelligence, IM, and IT and NSS interoperability and supportability requirements certifications, as required. It is understood that the O-6 level review is not the final organizational position. Flag-level endorsement of O-6 level comments is not desired. Comments should be prioritized as critical, substantive or administrative (see definitions in Glossary). Convincing support for critical and substantive comments will be provided in a comment and justification format.

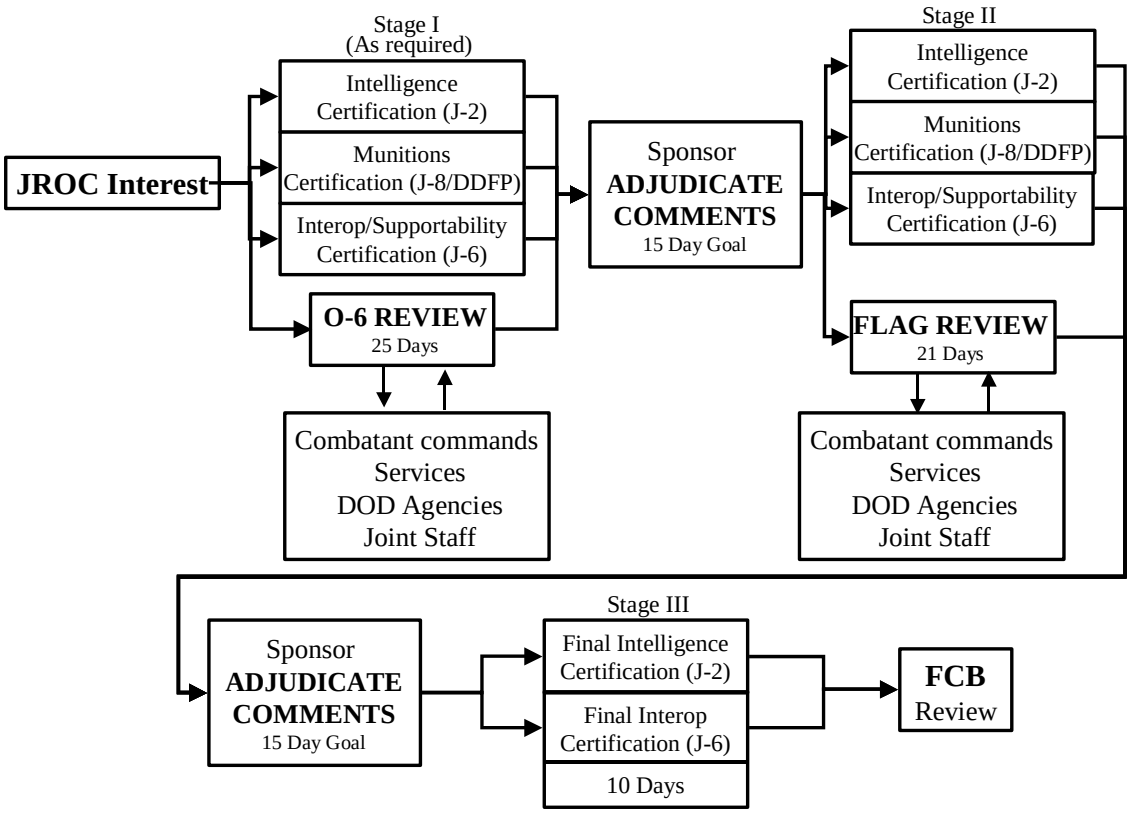

Figure C-2. JROC Interest Staffing Process

b. Adjudication of O-6 Comments. Joint Staff/J-8 CAD will compile and forward all comments to the sponsoring DOD component via KM/DS for resolution. After revision of the document to reflect O-6 level review comments, the sponsor will return it to Joint Staff/J-8 CAD via KM/DS for flag-level review. The sponsor will provide a comment resolution matrix delineating the critical and substantive comments, the results of the intelligence and munitions supportability certifications received during O-6 level review and the actions taken. Unresolved comments will be brought to the FCB working group for assistance in resolution. For ease of review, all changes to the document should be highlighted.

c. FCB Working Group Assessment. The lead FCB working group may begin an assessment immediately after the Gatekeeper actions are complete. The sponsor will work with the lead FCB action officer to present the document to the working group as early as possible to allow a full and rigorous independent assessment of the submitted document and supporting analysis (FAA, FNA, FSA, PIA, AoA, etc.). The sponsor and working group will resolve all issues or submit those they cannot resolve to the FCB.

d. Flag-Level Review. The flag-level review is conducted in the same manner as the O-6 review. The only difference is the rank of the official approving the review comments. This review will include Stage II threat validation and intelligence supportability, IM, and IT and NSS interoperability certifications, as required. For joint integration documents, this Stage II staffing will be accomplished at the O-6 level. The suspense date assigned for providing comments and/or concurrence will normally be 21 calendar days from transmittal date.

e. Adjudication of Flag Comments and Briefing Preparation. Upon completion of flag-level review, Joint Staff/J-8 CAD will forward all comments to the sponsor via KM/DS for final resolution. Unresolved comments will be brought to the FCB for assistance in resolution. Comments that cannot be resolved with FCB assistance will be included in the briefing to the JCB and JROC with a recommendation from the FCB for resolution. Once the sponsor has incorporated necessary changes into its document and developed a briefing in accordance with reference p, the sponsor will schedule a briefing to the lead FCB and request a JCB and JROC briefing date and time from the JROC Secretariat through KM/DS.

f. Final Certification. Upon adjudication of flag comments and submission of the final document to KM/DS, the Joint Staff/J-6, Joint Staff/J-2 and DIA will review the final document and the adjudicated comment resolution matrix to complete final interoperability and intelligence certifications. Upon satisfactory review, the J-6 will issue the interoperability certification (reference h), and J-2 will issue intelligence certification (reference m).

g. FCB Review. When the staffing process is complete for JROC Interest documents, the lead FCB will review the results and make a recommendation to the JROC regarding validation and/or approval of the document, as shown in Figure C-3.

h. FPO Review of Joint DCRs. Functional process owners (FPO) (J-1: Manpower and Personnel; J-4: Facilities; J-7: Doctrine, Leadership and Education, and Training; J-8: Organization and Materiel) will use the JROC-approved criteria in reference q to provide the following endorsement statement to the lead FCB (FPOs will withhold endorsement of a joint DCR until critical comments are resolved):

> "The Sponsor (combatant commander, Service and/or agency), in coordination with the applicable FPO, has adequately addressed potential impacts on joint, multinational and interagency warfighting and other operations with respect to joint _____ ("training" for example) resulting from the [implementation of this concept] or [acquisition and employment of this system]."

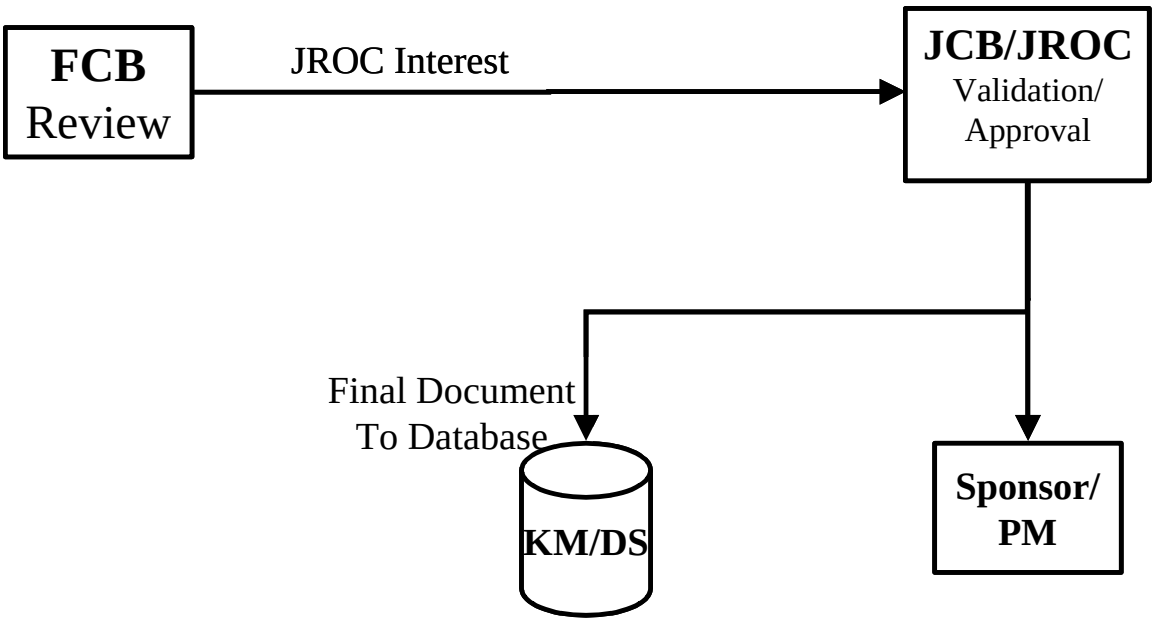

Figure C-3. JROC Interest Validation and Approval

(1) JROC Interest Documents. The FCB will evaluate and forward the JCIDS documents to the JROC, via the JCB, for validation. A representative from the FCB will set the stage for the JCB and JROC decision briefings by framing the proposal in terms of the functional area, the relevant range of military operations and the timeframe under consideration. The FCB representative will present the FCB's recommendation and any outstanding issues to the JCB and the JROC and the relative priority of the initiative within

the FCB's portfolio. The sponsor will then deliver the decision briefing. The JROC will validate and approve the proposal or return it to the sponsor for additional information, as required.

(2) JROC Briefing Format and Schedule. Briefings delivered to the FCB, the JCB and the JROC will be prepared in accordance with reference p. The sponsor will provide the updated draft document and briefing slides 48 hours before the FCB, JCB or JROC brief. The sponsor should have any required JROC briefing completed at least 30 days prior to each milestone review.

(3) Approved Documents. The sponsor will ensure that the approved document is posted to the KM/DS database for future reference and cross-component harmonization.

i. Sponsor Validation and Approval. If a document is assigned a JPD of Joint Integration or Independent, it will move into the validation and approval process as shown in Figure C-4. The FCB may review the document for JPD accuracy and possible joint implications. Following the review, the document will be returned to the Gatekeeper for redesignation if required.

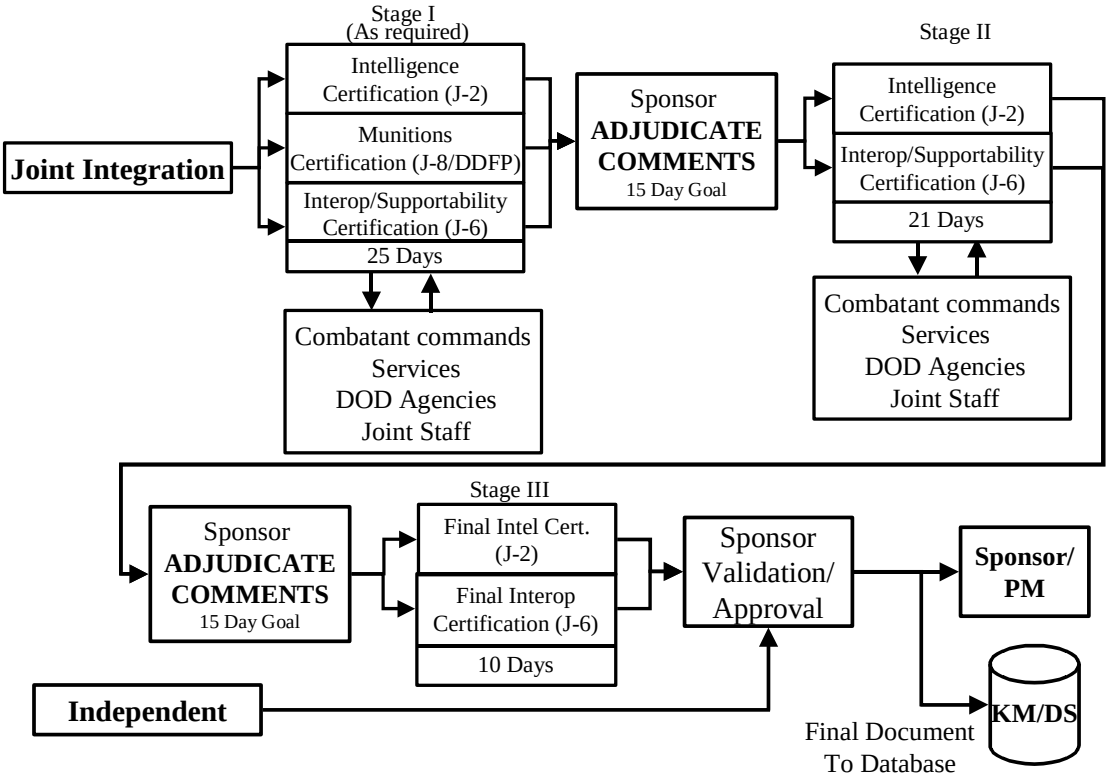

Figure C-4. Joint Integration and Independent Staffing Process

(1) Joint Integration proposals in an ICD, CDD or CPD will be staffed by Joint Staff/J-8 CAD through Stage I and Stage II staffing for IT and NSS interoperability and supportability (not applicable for ICDs), IM and intelligence certifications. Upon completion of Stage II staffing, the final document and the adjudicated comment resolution matrix will be submitted to Joint Staff/J-2 and Joint Staff/J-6 for a final review to receive certification. The certifications may be reviewed by the FCB. The document will then be returned to the sponsor for final validation and approval.

(2) Documents designated as Independent may be reviewed by the FCB. They will be returned to the sponsor for validation and approval.

(3) When Joint Integration and Independent documents are approved, the sponsor will post them to the KM/DS database for future reference and cross-component harmonization review.

j. JPD Appeal Process. The sponsor, Services or other members of the FCB may appeal the JPD designation through the FCB. The resulting FCB recommendation will be forwarded to the Gatekeeper for resolution.

k. Document Revisions. When documents are updated, the staffing and approval path will be determined by the type of document, the scope of the change and the JPD.

(1) JCD changes will be resubmitted for a Gatekeeper review to determine if the previously assigned JPD still applies. If the JPD is reaffirmed, the appropriate staffing and approval process will be followed. If a revised JPD is assigned, the new staffing and approval process will be followed.

(2) ICDs are not normally updated. Significant changes to an ICD result in a new document that must be submitted through the JCIDS staffing and approval process.

(3) CDD and CPD changes will be resubmitted for staffing and approval under two circumstances:

(a) The document has a JPD of JROC Interest and the changes impact the KPPs.

(b) The document has a JPD of JROC Interest, the changes do not impact the KPPs and validation authority for non-KPP changes has not been delegated to the sponsor by the JROC.

(4) For all other cases, the sponsor has validation and approval authority over changes. The updated document must be submitted to KM/DS for archiving upon completion.

(INTENTIONALLY BLANK)

ENCLOSURE D

JOINT CAPABILITIES DOCUMENT

1. General

a. The JCD is the result of a CBA that identifies what is important to the joint warfighter and how to evaluate future systems in their ability to deliver those capabilities. A CBA uses relevant parameters and associated metrics to quantify the key characteristics (attributes) of systems and forces in order to determine how capable they are of performing those critical tasks needed to accomplish future military objectives. The JCD will in general cover a much broader scope of capabilities than that described in an ICD. The JCD may be the predecessor document for one or more ICDs and/or joint DCRs.

b. The JCD describes capability gaps that exist in joint warfighting functions, as described in the applicable Family of Joint Future Concepts or CONOPS. The JCD establishes the linkage between the key characteristics identified in the Family of Future Joint Concepts and the capabilities identified through the FAA. The JCD defines the capability gaps in terms of the functional area, the relevant range of military operations and the timeframe under consideration. Table D-1 lists the documents that guide or depend on the development of the JCD. The JCD must capture the results of a well-framed JCIDS analysis (FAA and FNA), as described in Enclosure A.

c. A JCD will be generated, validated and approved to define and prioritize the capabilities required for joint warfighting. The JCD is used as the basis for one or more FSAs and resulting ICDs or joint DCRs. The JCD is informed by and will also be used as a basis for updating the integrated architectures and the capability roadmaps.

2. JCD Focus

a. The combatant command develops a JCD based on its Unified Command Plan (UCP)-assigned missions. This effort should be coordinated with the Joint Staff, Services, agencies and USJFCOM. The JCD identifies the joint capabilities required to accomplish those missions, and through the CBA identifies gaps in those capabilities.

b. An FCB develops a JCD as directed by the JROC based on the CBA of the Family of Joint Future Concepts. The JCD documents the JCIDS analyses that describe the joint capabilities identified by the FCB and identifies the gaps in those capabilities.

Predecessor Documents and Information
Family of Joint Future Concepts and CONOPS
DPS
DIA Validated Threat Documents (Capstone Threat Assessments as available)
Capability Roadmaps
Integrated Architectures

Dependent Documents
Integrated Architectures
Technology Development Strategy
Test and Evaluation Strategy
Clinger-Cohen Certification for MAIS and Ships
ICD
Capability Roadmaps
Joint DCR

Table D-1. JCD Linkage to Program Documents

c. Combat support agencies with designated functional manager roles develop JCDs to define the capabilities necessary for their functional area of responsibility.

d. A sponsor may also develop a JCD to define the set of capabilities for a mission after coordination with the appropriate FCBs and combatant commands to ensure no duplication of work.

e. The JCD will identify the relative priority of the capability gaps and identify those areas where risk may be taken. The JROC will task sponsors with performing follow-on FSAs and development of ICDs when appropriate.

3. JCD Development and Documentation

a. The JCD supports the development of joint DCRs to implement non-materiel solutions and the development of ICDs for materiel solutions.

b. The JCD developer will prepare the JCD in coordination and/or collaboration with the appropriate DOD components, agencies, FCB working groups, OUSD(AT&L), OPA&E (when appropriate) and integrated architecture leads. The JCD will include a description of the operational capability, capability gap, threat, shortcomings of existing systems, the measures of effectiveness, program support, joint DOTMLPF and policy impact and constraints for the capabilities.

c. The JCD will capture the results of the FAA and FNA, identifying the required joint capabilities and the current or projected gaps or redundancies. This JCD will identify the attributes and MOEs associated with these capabilities and prioritize the gaps based on operational considerations. The JCD will also identify areas where risk may be taken. The JCD will be submitted to the Joint Staff for JROC validation prior to initiation of the FSA. JCDs will be reviewed and updated as changes are made to the Family of Joint Future Concepts. The JCD will be used as a baseline for one or more ICDs or joint DCRs.

d. All draft and approved JCDs should display appropriate classification and releasability markings.

e. The JCD format and detailed content instructions of the JCD are provided in Appendix A of this enclosure.

4. JCD Validation and Approval. The JROC validates and approves all JCDs.

5. JCD Publication and Archiving. Approved JCDs (SECRET and below) will be posted to the KM/DS tool, so that all approved JCIDS documents are maintained in a single location.

(INTENTIONALLY BLANK)

APPENDIX A TO ENCLOSURE D

JOINT CAPABILITIES DOCUMENT FORMAT

CLASSIFICATION OR UNCLASSIFIED

JOINT CAPABILITIES DOCUMENT
FOR
TITLE

Validation Authority: JROC

Approval Authority: JROC

Designation: JROC Interest

Date

Note: Each subparagraph should be numbered to facilitate correlation and traceability and for ease of identifying issues during staffing. JCDs must be submitted in Microsoft Word (6.0 or greater) format. All JCDs must be clearly labeled with draft version number and date and include any caveats regarding releasability, even if unclassified. The intent is to share JCDs with allies and industry wherever possible at an appropriate time in the acquisition process. Draft documents will be submitted with line numbers displayed. Integrated architecture products will be embedded in the Microsoft Word file for ease of review during the staffing process.

1. Concept of Operations Summary. Describe the relevant part of the Family of Joint Future Concepts, CONOPS and/or UCP-assigned mission this JCD addresses; what operational outcomes it provides; what effects it must produce to achieve those outcomes; how it complements the integrated joint warfighting force; and what enabling capabilities are required to achieve its desired operational outcomes.

2. Joint Functional Area. Cite the applicable functional area(s), the range of military operations and the timeframe under consideration. Also identify the relevant DPSs that apply to this JCD.

3. Required Capability. Describe the capabilities required as identified during the FAA. These capabilities may require support from one or more functional areas. Describe the tasks and functions that are required for the capability to be successfully employed in accomplishing the mission.

4. Capability Gap(s). This section summarizes the results of the FNA.

a. Describe, in operational terms, the missions, tasks and functions that cannot be performed or are unacceptably limited and when they will become

unacceptable limited. Identify whether the capability gap is due to lack of proficiency in existing capability (cannot do the mission to the level expected), due to lack of sufficient capability (do not have enough of an effective capability) or the capability does not exist. This discussion should also provide the linkage between the required capabilities, the key characteristics as defined in the Family of Joint Future Concepts.

b. Describe the characteristics of the desired capabilities in terms of desired outcomes. Broad descriptions of desired outcomes help ensure that the required capabilities are addressed without constraining the solution space to a specific, and possibly limited, materiel system. Where multiple characteristics are identified, they should be prioritized based on value to delivering the capability within the context of the CONOPS described earlier. For instance, if you are delivering cargo, which is more important: speed, range, cargo size, cargo weight, etc?

c. Where multiple capability gaps are identified, a recommended prioritization of the gaps should be developed. This prioritization should be based on their contribution to future joint operations. In addition, identify those gaps where risk may be taken to ensure resources are applied to high priority gaps.

d. Provide a table (X.X) summarizing all capability gap(s), relevant parameters and associated metrics as shown below. Indicate the minimum value below which the capability will no longer be effective. Also indicate the priority of the capability gaps and which characteristics are key. This will be the basis for creating the linkages between the capabilities and the systems during the development of subsequent ICDs, CDDs and CPDs.

e. Descriptions of the identified capabilities should satisfy two rules.

(1) Rule 1. Capability descriptions must contain the required characteristics (attributes) with appropriate parameters and metrics, e.g., outcomes, time, distance, effect (including scale), obstacles to be overcome and supportability.

(2) Rule 2. Capability descriptions should be general enough so as not to prejudice decisions in favor of a particular means of implementation but specific enough to evaluate alternative approaches to implement the capability.

5. Threat and Operational Environment

a. Describe in general terms the operational environment in which the capability must be exercised and the manner in which the capability will be employed.

Table X.X. Example Capability Description Table

Priority/Key Indicator	Family of Joint Future Concepts key characteristics	Description	Parameters	Minimum value
		Capability 1		
		Characteristic 1	Description	Value
		Characteristic n	Description	Value
		Capability 2		
		Characteristic 1	Description	Value
		Characteristic n	Description	Value
		Capability n		
		Characteristic 1	Description	Value
		Characteristic n	Description	Value

b. Summarize the organizational resources that provided threat support to capability development efforts. Summarize the current and projected threat capabilities (lethal and non-lethal) to be countered. Reference the current DIA-validated threat documents and Service intelligence production center-approved products or data used to support initial JCIDS analysis. Contact the DIA's Defense Warning Office, Acquisition Support Division for assistance (DSN: 428-4521;
SIPRNET: http://www.dia.smil.mil/admin/di/dwo/POC.shtml or
JWICS: http://www.dia.ic.gov/admin/di/dwo/Link.shtml).

6. Recommendations. Provide recommendations on which of the capability gaps to pursue based on the relative priority and impact of the capability. If possible, identify a potential sponsor who will complete the capabilities-based assessment process and develop the required ICD and/or joint DCR to address the gaps.

Mandatory Appendices

Appendix A. Integrated Architecture Products. Include the required architecture framework view products developed, whenever possible, from integrated architectures. Formatting instructions are provided in reference i.

- Mandatory: OV-1
- Others as desired
- Note: Include only those architectural views not presented in the document.

Appendix B. References

Appendix C. Acronym List

Other Appendices or Annexes. As required to provide supporting information not included in the body of the JCD.

ENCLOSURE E

INITIAL CAPABILITIES DOCUMENT

1. General

a. The ICD is the result of a CBA that identifies what is important to the joint warfighter and how to evaluate future systems in their ability to deliver those capabilities. A CBA uses relevant parameters and associated metrics to quantify the key characteristics (attributes) of systems and/or forces in order to determine how capable they are of performing those critical tasks needed to accomplish future military objectives.

b. The ICD describes capability gaps that exist in joint warfighting functions, as described in the applicable Family of Joint Future Concepts or CONOPS. The ICD establishes the linkage between the key characteristics identified in the Family of Joint Future Concepts and the capabilities identified through the FAA. The ICD defines the capability gaps in terms of the functional area, the relevant range of military operations and the timeframe under consideration. Table E-1 lists the documents that guide or depend on the development of the ICD. The ICD must capture the results of a well-framed JCIDS analysis, as described in Enclosure A.

Predecessor Documents and Information
Family of Joint Future Concepts and CONOPS
JCDs (if applicable)
DPS
DIA Validated Threat Documents
DIA Initial Threat Warning Assessment
Integrated Architectures
Capability Roadmap

Dependent Documents
AoA Guidance
Technology Development Strategy
Test and Evaluation Strategy
Clinger-Cohen Certification for MAIS and Ships
CDD
CPD
Capability Roadmap
System Engineering Plan
Joint DCR

Table E-1. ICD Linkage to Program Documents

c. The ICD summarizes the results of DOTMLPF analysis and identifies any changes in US or allied doctrine, operational concepts, organization, training and policy that were considered in satisfying the deficiency. The ICD will identify and summarize the DOTMLPF and policy changes (non-materiel approaches) that may address the deficiency in part or in whole as part of the list of approaches addressed in the FSA. These DOTMLPF and policy changes may lead to the development of a joint DCR.

d. The ICD documents the evaluation of balanced and synchronized materiel and non-materiel approaches that are proposed to provide the required capability. It further proposes a prioritized list of materiel and non-materiel approaches based on analysis of the various possible approaches and their DOTMLPF or policy implications. Finally, the ICD describes how the approach(es) provides the desired joint capability and relates the desired capability to the key characteristics identified in the Family of Joint Future Concepts or CONOPS.

e. For ACAT I programs, an ICD will be generated, validated and approved to define and review the options for a new capability in a joint context and to ensure that all DOTMLPF and policy alternatives have been adequately considered, even if the program is proceeding directly to Milestone B or C. For those exceptional cases where ACAT II and below programs may be proceeding directly to Milestone B or C, the sponsor may request a waiver to the requirement for an ICD from the Joint Staff/J-8. The waiver request will provide justification for not writing an ICD. Upon approval of the waiver, the sponsor can proceed with submitting CDDs or CPDs for approval.

2. ICD Focus. The ICD documents the JCIDS analyses (described in Enclosure A) that describe one or more capability gaps and identifies potential non-materiel and materiel approaches to addressing those gaps. The approaches identified should cover the joint spectrum of possibilities. The result should not be a sponsor stove-piped approach to a gap. The ICD supports the follow-on AoA, if required; development of integrated architectures; update of capability roadmaps; the Technology Development Strategy; and the Milestone A acquisition decision (see reference c for DOD space programs).

3. ICD Development and Documentation

a. For materiel approaches, the ICD guides the Concept Refinement and the Technology Development phases of the acquisition process and supports the Concept Decision and Milestone A acquisition decision (see reference c for DOD space programs). The ICD may also support the development of a joint DCR to implement a non-materiel solution.

b. The ICD sponsor will prepare the ICD in coordination and/or collaboration with the appropriate DOD components, agencies, FCB working groups, OPA&E (when appropriate), OUSD(AT&L), applicable JCD leads and integrated architecture leads. The ICD will include a description of the operational capability, capability gap, threat, shortcomings of existing systems, the measures of effectiveness, program support, joint DOTMLPF and policy impact and constraints for the capabilities.

c. The ICD may be developed as a single document defining required capabilities and approaches to providing those capabilities. ICDs may also be developed based on the analysis in an approved JCD combined with a completed FSA that addresses one or more of the capability gaps identified in the JCD.

d. All draft and approved ICDs should display appropriate classification and releasability markings.

e. The ICD format and detailed content instructions of the ICD are provided in Appendix A of this enclosure.

4. ICD Validation and Approval. The determination of the validation and approval authorities for the ICD depends on the JPD assigned by the Gatekeeper, as described in Enclosure C.

5. ICD Publication and Archiving. Approved ICDs (SECRET and below), regardless of ACAT or JPD designation, will be posted to the KM/DS tool so that all approved JCIDS documents are maintained in a single location.

(INTENTIONALLY BLANK)

APPENDIX A TO ENCLOSURE E

INITIAL CAPABILITIES DOCUMENT FORMAT

CLASSIFICATION OR UNCLASSIFIED
INITIAL CAPABILITIES DOCUMENT
FOR
TITLE

Potential ACAT: _____

Validation Authority: _____

Approval Authority: _____

Milestone Decision Authority: _____

Designation: JROC Interest/Joint Integration/Independent

Prepared for Concept Refinement Decision (or specify other acquisition decision point)

Date

Note: Each subparagraph should be numbered to facilitate correlation and traceability and for ease of identifying issues during staffing. ICDs must be submitted in Microsoft Word (6.0 or greater) format. All ICDs must be clearly labeled with draft version number and date and include any caveats regarding releasability, even if unclassified. The intent is to share ICDs with allies and industry wherever possible at an appropriate time in the acquisition process. Draft documents will be submitted with line numbers displayed. Integrated architecture products will be embedded in the Microsoft Word file for ease of review during the staffing process. Ideally, the body of the ICD should be no more than 10 pages long.

1. Joint Functional Area. Cite the applicable functional area(s), the range of military operations and the timeframe under consideration.

2. Required Capability. Describe the particular aspects of the Family of Joint Future Concepts that the ICD addresses and explain why the desired capabilities are essential to the joint force commander to achieve military objectives. Reference any validated JCDs capability gaps for which this ICD is identifying approaches.

3. Concept of Operations Summary. Describe the relevant part of the Family of Joint Future Concepts, CONOPS and/or UCP-assigned mission to which this capability contributes; what operational outcomes it provides; what effects it must produce to achieve those outcomes; how it complements the integrated joint warfighting force; and what enabling capabilities are required to achieve

its desired operational outcomes. Also identify the relevant DPSs that apply to this JCD.

4. Capability Gap(s)

a. Describe, in operational terms, the missions, tasks and functions that cannot be performed or are unacceptably limited. Identify whether the capability gap is due to lack of proficiency in existing capability (cannot do the mission to the level expected) or due to lack of sufficient capability (do not have enough of an effective capability). This discussion should also provide the linkage between the required capabilities, the key characteristics identified in the Family of Joint Future Concepts and/or CONOPS.

b. Describe the attributes of the desired capabilities in terms of desired outcomes. Broad descriptions of desired outcomes help ensure that the required capabilities are addressed without constraining the solution space to a specific, and possibly limited, materiel system. Where multiple characteristics are identified, they should be prioritized based on value to delivering the capability within the context of the CONOPS described earlier. For instance, if you are delivering cargo, which is more important: speed, range, cargo size, cargo weight, etc?

c. Where multiple capability gaps are identified, a recommended prioritization of the gaps should be developed. This prioritization should be based on the prioritized attributes for the capabilities. In addition, identify those gaps where risk may be taken to ensure resources are applied to high priority gaps.

d. Provide a table (X.X) summarizing all capability gap(s), relevant parameters and associated metrics as shown below. Indicate the minimum value below which the capability will no longer be effective. Also indicate the priority of the capability gaps and which characteristics are key. This will be the basis for creating the linkages between the capabilities and the systems during the development of subsequent CDDs and CPDs.

e. Definitions of the identified capabilities should satisfy two rules.

(1) Rule 1. Capability definitions must contain the required characteristics (attributes) with appropriate parameters and metrics, e.g., outcomes, time, distance, effect (including scale), obstacles to be overcome and supportability.

(2) Rule 2. Capability definitions should be general enough so as not to prejudice decisions in favor of a particular means of implementation but specific enough to evaluate alternative approaches to implement the capability.

Priority/Key Indicator	JOpsC key characteristics	Description	Parameters	Minimum value
		Capability 1		
		Characteristic 1	Description	Value
		Characteristic n	Description	Value
		Capability 2		
		Characteristic 1	Description	Value
		Characteristic n	Description	Value
		Capability n		
		Characteristic 1	Description	Value
		Characteristic n	Description	Value

Table X.X. Example Capability Description Table

f. The discussion above should capture the FAA and FNA described in Enclosure A.

5. Threat and Operational Environment

a. Describe in general terms the operational environment in which the capability must be exercised and the manner in which the capability will be employed. Summarize the organizational resources that provided threat support to capability development efforts.

b. Summarize the current and projected threat capabilities (lethal and non-lethal) to be countered. Reference the current DIA-validated threat documents and Service intelligence production center-approved products or data used to support initial JCIDS analysis. Contact the DIA's Defense Warning Office, Acquisition Support Division for assistance (DSN: 428-4521; SIPRNET: http://www.dia.smil.mil/admin/di/dwo/POC.shtml or JWICS: http://www.dia.ic.gov/admin/di/dwo/Link.shtml).

6. Functional Solution Analysis Summary. The subparagraphs below summarize the results of the FSA as described in Enclosure A.

a. Ideas for Non-Materiel Approaches (DOTMLPF Analysis). Summarize the results of the analysis. Identify any changes in US or allied doctrine, operational concepts, tactics, organization, training, materiel, leadership and education, personnel, facilities or policy that are considered in satisfying the deficiency in part or in whole. If one or more non-materiel approaches are a possibility, they should be summarized and included in the analysis of materiel and non-materiel approaches.

b. Ideas for Materiel Approaches. If a materiel approach may be required to address a capability gap, list the materiel approaches that should be considered during the analysis. This list should leverage the expertise of the components, laboratories, agencies and industry to provide a robust set of divergent materiel approaches that includes single- and multi-Service, multi-agency, allied and other appropriate FoS or SoS approaches. Indicate potential areas of study for concept refinement. These areas may include the use of existing and future US or allied military or commercial systems, including modified commercial systems or product improvements of existing systems.

c. Analysis of Materiel/Non-Materiel Approaches (AMA). Summarize how the proposed materiel and non-materiel approaches address capability gaps, using wherever possible the JROC-approved key attributes and the metrics of the functional area integrated architecture and applicable US-ratified international standardization agreements (reference e). Address all approaches identified by the analysis body. The analysis will produce a list of approaches that may provide the capabilities required by the user. To produce the list, the AMA will consider the integrated architecture approved metrics, applicable US-ratified international standardization agreements, technological maturity and the overall impact of the solution on the functional and cross-functional areas. The approaches may be a combination of materiel and non-materiel solutions that deliver the desired capability. For FoS and/or SoS approaches, the analysis will identify the impact of synchronization on the approach. Ensure all aspects of the AMA are addressed as described in Enclosure A.

7. Final Recommendations. Describe the best materiel and/or non-materiel approaches as determined by the PIA. This should include consideration of combinations of non-materiel and materiel approaches that can be used to address the entire capability gap.

a. Describe the non-materiel recommendations that should be considered for implementation through a joint DCR.

b. Describe the non-materiel recommendations that should be considered for implementation through a sponsor's internal DOTMLPF change process.

c. Describe the materiel approach(es) recommended for further analysis during concept refinement and technology development.

(1) If an evolutionary acquisition approach is recommended, also discuss the minimum capability required to fill the gap described in paragraph 2 of the ICD, in the near term and for the long term. If the program is expected to proceed immediately to a Milestone B or C decision, describe the materiel recommendations proposed to be further analyzed during SDD.

(2) Describe the key boundary conditions, including DOTMLPF and policy constraints, within which the AoA should be performed. These

constraints must be crafted to allow reasonable compromise between focusing the AoA and ensuring that the AoA considers novel and imaginative alternative solutions. The key boundary conditions must reflect a thorough understanding of the functional and operational areas and the conditions under which the ultimate system(s) must perform.

(3) Discuss the non-materiel and/or DOTMLPF and policy implications and constraints of the recommended materiel approach or approaches.

Mandatory Appendices

Appendix A. Integrated Architecture Products. Include the required architecture framework view products developed, whenever possible, from integrated architectures. Formatting instructions are provided in reference i.

- Mandatory: OV-1
- Others as desired
- Note: Include only those architectural views not presented in the document.

Appendix B. References

Appendix C. Acronym List

Other Appendices or Annexes. As required to provide supporting information not included in the body of the ICD.

(INTENTIONALLY BLANK)

ENCLOSURE F

CAPABILITY DEVELOPMENT DOCUMENT

1. General

a. The CDD is the sponsor's primary means of defining authoritative, measurable and testable capabilities needed by the warfighters to support the SDD phase of an acquisition program. Table F-1 lists the types of documents that precede or depend on the CDD. Integrated architecture, applicable JCDs, the ICD, the AoA (unless waived by the MDA) and the technology development strategy guide development of the CDD. The CDD captures the information necessary to deliver an affordable and supportable capability using mature technology within a specific increment of an acquisition strategy. The CDD must include a description of the DOTMLPF and policy impacts and constraints. The CDD will be validated and approved before Milestone B (see reference c for DOD space programs). The CDD will be validated and approved prior to program initiation for shipbuilding programs.

b. In an evolutionary acquisition program, the capabilities delivered by a specific increment may provide only a part of the ultimate desired capability; therefore, the first increment's CDD must provide information regarding the strategy for achieving the full capability. Subsequent increments leading to the full capability are also described to give an overall understanding of the program preliminary approach. CDDs for subsequent increments will update the overall approach to reflect lessons learned from previous increments, changes in the Family of Joint Future Concepts, CONOPS or integrated architectures, and other pertinent information. Additionally, the AoA should be reviewed for its relevance for each program to each CDD increment and, if necessary, should be updated or a new AoA initiated.

c. The CDD provides the operational performance attributes necessary for the acquisition community to design a proposed system(s) and establish a program baseline. It states the performance attributes, including KPPs, that will guide the development and demonstration of the proposed increment. Guidance for the development of KPPs is provided in Enclosure B. The performance attributes and KPPs will apply only to the proposed increment. If the plan requires a single step to deliver the full capability, the KPPs will apply to the entire system(s). Each increment must provide an operationally effective, suitable and useful capability in the intended mission environment that is commensurate with the investment, and independent of any subsequent increment.

Predecessor Documents and Information	Dependent Documents
Family of Joint Future Concepts and CONOPS	Acquisition Program Baseline (APB) for Milestone B of the Current Increment
JCDs and ICDs	Cost Analysis Requirements Description
Technology Development Strategy	Clinger-Cohen Certification (Updated for Milestone B for Major Automated Information Systems)
System Threat Assessment	Acquisition Strategy
AoA Report	Test and Evaluation Master Plan
Integrated Architectures	DD Form 1494 (Required to Obtain Spectrum Certification)
Complete Automated Standards Profile as Required in Reference H	ISP
Capability Roadmap	Capability Roadmap
	System Engineering Plan
	Manpower Estimate
	CDD

Table F-1. CDD Linkage to Program Documents

d. The CDD articulates the attributes that may be further refined in the CPD. It states the essential attributes of a program, including affordability and supportability, from the warfighter's perspective. The CDD shall be updated or appended for each Milestone B decision.

e. The CDD addresses a single system or SoS only, although it may refer to any related systems needed in a FoS or a SoS approach necessary to provide the required capability. When the ICD recommends a materiel approach consisting of a FoS, each individual system will have its own CDD. A SoS will normally be treated as if it were a single system using a single CDD to describe highly interdependent systems that provide the capability using a SoS. When the CDD is being used to describe a SoS approach, it must address both the SoS KPPs and attributes and any unique KPPs and other attributes for each of the constituent systems. There may be cases where an individual system that is part of a SoS will be part of a separate acquisition. A CDD describing this system with linkages to the complete SoS will be developed. When it is necessary to synchronize development of systems to ensure delivery of a

capability, the CDD will identify the source ICDs and the related CDDs and CPDs. For example, a program addressing a capability gap may require two unique or separate systems to provide the required capability (e.g., a bomb and a UAV). Conversely, there are also cases where related but different capabilities can be included in one CDD. For example, the development of a multi-mission aircraft could be captured in a single CDD.

f. When the sponsor of an ACTD or ATD determines that the demonstration is complete, but additional development is required before fielding, a CDD will be developed to guide the development process. The MUA (completed at the end of the ACTD or ATD) will be used to guide the development of the CDD. The CDD will then be submitted for staffing and approval prior to the Milestone B decision.

g. Care must be taken to stabilize and not over specify attributes. Those attributes that contribute to the key characteristics identified in the JOpsC will be designated as KPPs. To supply the necessary performance attributes, the program manager will develop system-level details in technical documentation.

2. CDD Focus. The CDD specifies the attributes of a system in development. These will provide or contribute to the operational capabilities that are inserted into the performance section of the acquisition strategy and the APB. All CDD KPPs are inserted verbatim into the APB. MOE and suitability, developed for the initial Test and Evaluation Master Plan (TEMP) at Milestone B, are based on the performance attributes and KPPs identified in the CDD.

3. CDD Development and Documentation

a. The CDD is generated prior to Milestone B of the acquisition process. The CDD is an entrance criteria item that is necessary to proceed to each Milestone B acquisition decision. It describes a technologically mature and affordable increment of a militarily useful capability that was demonstrated in an operationally relevant environment. The CDD will support entry into SDD and refinement of integrated architectures (see reference c for DOD space programs).

b. The CDD sponsor will apply lessons learned during the Technology Development phase, plus any other appropriate risk reduction activities, MUAs, ACTDs, ATDs, market research, experimentation, test and evaluation, capability and schedule tradeoffs and affordability and supportability analysis in the development of the CDD.

c. The CDD sponsor, in coordination and collaboration with the appropriate DOD components (including the MDA-designated developer), agencies, FCB working groups and applicable ICD and JCD leads, will prepare the CDD. The CDD sponsor also will collaborate with sponsors of other CDDs and CPDs that are required in FoS or SoS solutions, particularly those generated from a

common ICD. In some of these cases it may be appropriate to develop annexes for the CDD. The annexes would describe excursions from the CDD to meet other sponsors' specific capability needs. The annexes do not repeat information already contained in the CDD, but only describe the changes. The CDD will include a description of the operational capability; threat; links to all applicable integrated architectures; US-ratified materiel international standardization agreements (reference e); required capabilities; program support; supportability; force structure; DOTMLPF and policy impacts and constraints; and schedule and program affordability for the system.

d. CDD development should leverage off related analysis and development with the associated ISP required by reference g. As required capabilities are developed, the output from the information needs discovery process (reference g) should help update the required architecture products and to identify the elements of required program support for inclusion in the CDD.

e. Draft and approved CDDs, both classified and unclassified, should be carefully marked to indicate whether the document is releasable to allies, industry or the public.

f. The CDD format and detailed content instructions are provided at Appendix A of this enclosure.

4. CDD Validation and Approval. The determination of the validation and approval authorities for the CDD depends on the JPD assigned by the Gatekeeper (as described in Enclosure C).

a. The JROC will review, validate and approve JROC Interest CDDs. In addition, the JROC may, at its discretion, review CDDs at any time deemed appropriate.

(1) The JROC may retain complete approval authority over JROC Interest CDDs (i.e., no changes of any kind allowed without consent of the JROC) or may delegate approval authority for non-KPP changes to a component. JROC review of JROC Interest CDDs is required any time a recommendation is made to change a KPP.

(2) Delegation of approval authority for JROC Interest CDDs allows the designated lead component, in coordination with other appropriate DOD components, to make non-KPP tradeoffs between acquisition milestones for the specific increment without JROC approval. Delegation of approval authority will not usually be granted beyond a single increment in an evolutionary acquisition.

b. Joint Integration and Independent CDDs will be validated and approved by the sponsoring component.

5. Certifications. JROC Interest CDDs will receive applicable intelligence, IM, and IT and NSS interoperability and supportability certifications prior to JROC validation. Joint Integration CDDs also will receive these certifications as required, and may be assessed by the FCB working group and reviewed by the FCB before they are returned to the sponsoring component for validation and approval. Independent CDDs do not require certification and may be assessed by the FCB working group, reviewed by the FCB and returned to the sponsor for validation and approval.

6. Formal CDD Staffing. The first step in obtaining validation and approval is the formal review of the document. The staffing process is described in Enclosure C. Supporting documentation, such as AoA results, ICDs and any additional previously approved documents, should be made available electronically for inclusion in the package. The CDD should not be submitted until the AoA or other supporting analysis is completed. If an AoA has not been conducted, an explanation and an electronic copy of whatever alternative analysis has been performed (or planned) will be made available or attached.

7. CDD Review and Revalidation. The CDD is refined and updated when necessary and before the Milestone B decision for each increment. This update will incorporate the results of the activities during the acquisition phase (i.e., cost, schedule and performance tradeoffs, testing and lessons learned from previous increments). Two options are available for second (and follow-on) increment CDDs. If the follow-on increment is consistent with the strategy described in previous CDDs and the only changes are to the capabilities provided by the new increment (described in paragraph 5 of the CDD), an addendum to the previous CDD may be developed for validation and approval, as appropriate. If the increment contains significant revisions to the overall strategy, the capabilities provided by the next or future increments, or other information beyond changes to paragraph 5, an appropriately revised complete CDD should be submitted.

8. CDD Publication and Archiving. Approved CDDs (SECRET and below), regardless of JPD designation, will be posted to the KM/DS tool, so that all approved JCIDS documents are maintained in a single location.

9. System Capabilities. The CDD identifies, in threshold-objective format, the attributes that contribute most significantly to the desired operational capability as discussed in Enclosure B. These attributes will be used to guide the acquisition community in making tradeoffs between the threshold and the objective levels of the stated attributes. Tradeoffs must be assessed for their impact on the capability needs identified in the source ICDs. When an attribute's values change in follow-on increments, the CDD should include the values for previous increments for reference purposes.

10. Key Performance Parameters. The KPP threshold and objective values are based on results of efforts and studies that occur prior to Milestone B, including the Technology Development phase (if applicable). Each selected KPP should be directly traceable to the most critically needed attributes of capabilities defined in the ICD and to the key characteristics identified in the JOpsC. Guidance for the development of KPPs is provided in Enclosure B. In selecting KPPs and their values, the sponsor will leverage the expertise of the operational users and the acquisition community. The CDD should contain those KPPs that capture the attributes needed to achieve the overall desired capabilities for the system(s). Failure to meet a CDD KPP threshold can be cause for reevaluation of the system selection, reassessment of the program or modification of the content of production increments.

a. CDD KPPs are inserted verbatim into the performance section of the APB. KPPs will be developed relating to each of the key characteristics as identified in the JOpsC when the system contributes to those capabilities. A NR-KPP will be a mandatory KPP in every increment for programs that exchange information.

b. The CDD should document how its KPPs are responsive to applicable JCD capabilities and key characteristics and/or metrics. For JCDs to be effective, it is essential that all JCD sponsors review all related JROC Interest and Joint Integration CDDs and CPDs for applicability to their JCD. This support is important because CDD and CPD authors cannot in all cases be expected to understand the full impact and scope of every JCD.

APPENDIX A TO ENCLOSURE F

CAPABILITY DEVELOPMENT DOCUMENT FORMAT

CLASSIFICATION OR UNCLASSIFIED

CAPABILITY DEVELOPMENT DOCUMENT
FOR
TITLE

Increment: _____

ACAT: _____

Validation Authority: _____

Approval Authority: _____

Milestone Decision Authority: _____

Designation: JROC Interest/Joint Integration/Independent

Prepared for Milestone B Decision (or specify other acquisition decision point)

Date

Note: Each subparagraph should be numbered to facilitate correlation and traceability and for ease of identifying issues during staffing. CDDs must be submitted in Microsoft Word (6.0 or greater) format. Provide the SV-6 as a separate file in Microsoft Excel format for ease of importation into analysis tools. All CDDs must be clearly labeled with draft version number, increment and date and must include any caveats regarding releasability, even if unclassified. The intent is to share CDDs with allies and industry wherever possible at an appropriate time in the acquisition process. Draft documents will be submitted with line numbers displayed. Integrated architecture products will be embedded in the Microsoft Word file for ease of review during the staffing process. Ideally, the body of a CDD for complex systems should be no more than 35 pages long.

Executive Summary (2 pages maximum)

Revision History

Table of Contents (with list of tables, figures and appendices)

Points of Contact

1. Capability Discussion. Cite the applicable ICDs and/or applicable MUAs and provide an overview of the capability gap in terms of relevant range of military operations and the timeframe under consideration. Describe the capability that the program delivers and how it relates to the key characteristics identified in the Family of Joint Future Concepts, CONOPS and integrated architectures. Discuss how the current increment contributes to the required capability.

a. Discuss the operating environment of the system. Address how the capability will be employed on the battlefield and where it will be employed and/or based.

b. If the CDD is part of a FoS or SoS solution, identify the source JCD or ICD and discuss the related CDDs, CPDs, integrating DOTMLPF and policy changes and required synchronization.

c. Cite any additional previously approved JCIDS documents pertaining to the proposed system.

2. Analysis Summary. Summarize all analyses, that is, AoA and/or other support analysis conducted to determine the system attributes and to identify the KPPs. Include the alternatives, objective, the criteria, assumptions, recommendation and conclusion. A description of the analysis methodology and the analysis results shall be provided in an appendix.

3. Concept of Operations Summary. Describe the relevant part of the Family of Joint Future Concepts, CONOPS and/or UCP-assigned mission to which this capability contributes, what operational outcomes it provides, what effects it must produce to achieve those outcomes, how it complements the integrated joint warfighting force and what enabling capabilities are required to achieve its desired operational outcomes.

4. Threat Summary. Summarize the projected threat environment and the specific threat capabilities to be countered. Include the nature of the threat, threat tactics and projected threat capabilities (both lethal and nonlethal) over time. Programs designated as ACAT I/ID (or potential ACAT I/ID) must incorporate DIA-validated threat references. All other programs may use Service intelligence center-approved products and data. Summarize the organizational resources that provided threat support to capability development efforts. Contact the DIA's Defense Warning Office, Acquisition Support Division for assistance (DSN: 428-4521;
SIPRNET: www.dia.smil.mil/admin/di/dwo/POC.shtml or
JWICS: www.dia.ic.gov/admin/di/dwo/Link.shtml).

5. Program Summary. Provide a summary of the overall program strategy for reaching full capability and the relationship between the increment addressed by the current CDD and any other increments of the program. The timing of delivery of each increment is important. Carefully address the considerations (e.g., technologies to be developed, other systems in a FoS or SoS, inactivation of legacy systems) that are driving the incremental delivery plan. For follow-on increments, discuss any updates to the program strategy to reflect lessons learned from previous increments, changes in Family of Joint Future Concepts, CONOPS, or integrated architectures or other pertinent information. Identify

known external dependencies and associated risks. In addition, provide an update on the acquisition status of previous increments.

6. System Capabilities Required for the Current Increment

a. Provide a description of each attribute and list each attribute in a separate numbered subparagraph. Include a supporting rationale for the capability and cite any analytic references. When appropriate, the description should include any unique operating environments for the system. Provide any additional information that the program manager should consider. If the CDD is describing a SoS solution, it must describe the attributes for the SoS level of performance and any unique attributes for each of the constituent systems.

b. Present each attribute in output-oriented, measurable and testable terms. For each attribute, provide a threshold and an objective value. The program manager will use this information to provide incentives for the developing contractor or to weigh capability tradeoffs between threshold and objective values. Expressing capabilities in this manner enables the systems engineering process to develop an optimal product. If the objective and the threshold values are the same, indicate this by including the statement "Threshold = Objective."

c. Provide tables summarizing specified KPPs and additional performance attributes in threshold – objective format, as depicted below. For each KPP, identify the key characteristics identified in the JOpsC. Also provide a general discussion of the additional performance attributes.

JOpsC key characteristics	**Key Performance Parameter**	**Development Threshold**	**Development Objective**
	KPP 1	Value	Value
	KPP 2	Value	Value
	KPP 3	Value	Value

Table X.X. Example Key Performance Parameter Table

Attribute	**Development Threshold**	**Development Objective**
Attribute	Value	Value
Attribute	Value	Value

Table X.X. Additional Attributes

d. In accordance with the procedures described in references f, g and h, develop the CDD NR-KPP from the integrated architecture.

7. Family of System and System of System Synchronization. In FoS and SoS solutions, the CDD sponsor is responsible for ensuring that related solutions, specified in other CDDs and CPDs, remain compatible and that the development is synchronized. These related solutions should tie to a common JCD or ICD. The CDD sponsor, in coordination with the FCBs, is also responsible for ensuring that the CDD accurately captures the desired capabilities described in applicable JCDs.

a. Discuss the relationship of the system described in this CDD to other systems contributing to the capability(s). Discuss any overarching DOTMLPF and policy changes, which are required to make the FoS/SoS an effective military capability.

b. Provide a table that briefly describes the contribution this CDD makes to the capabilities described in the applicable JCDs and ICDs and the relationships to other CDDs and CPDs that also support these capabilities. For these interfaces to be effective, it is essential the CDD sponsor review all related JROC Interest and Joint Integration JCDs, ICDs, CDDs and CPDs for applicability to the FoS or SoS addressed by this CDD.

Table X-X. Supported ICDs/JCDs and Related CDDs/CPDs

Capability	**CDD Contribution**	**Related CDDs**	**Related CPDs**
ICD Capability Description #1	Brief description of the contribution made by this CDD	CDD Title	CPD Title
ICD Capability Description #2	Brief description of the contribution made by this CDD	CDD Title	CPD Title
JCD Capability	Brief description of the contribution made by this CDD	CDD Title	CPD Title

8. Information Technology and National Security Systems Supportability. For systems that receive or transmit information, provide an estimate of the expected bandwidth and quality of service requirements for support of the capability (on either a per-unit or an aggregate basis, as appropriate). For the CDD this will be a very rough order of magnitude estimate derived from the initial ISP (full details will be derived from the associated or updated ISP for Milestone C and included in the CPD). This description must explicitly distinguish the IT and NSS support to be acquired as part of this program, from IT and NSS support to be provided to the acquired system through other systems or programs (reference g). Sponsor will identify the communities of

interest (reference o) with which they are working to make the capability's data visible, accessible and understandable to other users on the GIG.

9. Intelligence Supportability. Identify, as specifically as possible, all projected requirements for intelligence support throughout the expected acquisition lifecycle in accordance with the format and content prescribed by reference m unless a waiver has been granted by J-2. Contact J-2 Intelligence Requirements Certification Office (J2P/IRCO) for assistance (DSN 225-4693/8085, SIPRNET http://www.dia.smil.mil/intel/j2/j2p/irco/main.html or JWICS http://j2irco.dia.ic.gov/irco/open_docs.html).

10. Electromagnetic Environmental Effects (E3) and Spectrum Supportability. Define the electromagnetic spectrum requirements that the system must meet to assure spectrum supportability in accordance with reference j. Describe the electromagnetic environment in which the system will operate and coexist with other US, allied, coalition, government and non-government systems. Identify potential operational issues regarding electromagnetic interference from threat emitters and from other E3 effects such as electromagnetic pulse. For spectrum-dependent systems, equipment spectrum certification is required to assure adequate access to the electromagnetic spectrum and sufficient availability of frequencies from host nations.

11. Assets Required to Achieve Initial Operational Capability (IOC). Describe the types and initial quantities of assets required to attain IOC. Identify the operational units (including other Services or government agencies, if appropriate) that will employ the capability, and define the initial asset quantities (including initial spares and training and support equipment, if appropriate) needed to achieve IOC.

12. Schedule and IOC and Full Operational Capability (FOC) Definitions. Define what actions, when complete, will constitute attainment of IOC and FOC of the current increment. Specify the target date for IOC attainment.

13. Other DOTMLPF and Policy Considerations. Discuss any additional DOTMLPF and policy implications associated with fielding the system that have not already been addressed in the CDD, to include those approaches that would impact CONOPS or plans within a combatant command's area of responsibility. Highlight the status (timing and funding) of the other DOTMLPF and/or policy considerations. Describe implications for likely changes to any aspect of DOTMLPF or policy. Discuss HSI considerations that have a major impact on system effectiveness, suitability and affordability. Describe, at an appropriate level of detail, the key logistics criteria, such as system reliability, maintainability, transportability and supportability that will help minimize the system's logistics footprint, enhance mobility and reduce the total ownership cost. Detail any basing needs (forward and main operating bases, institutional training base and depot requirements). Specify facility, shelter, supporting

infrastructure, anti-tamper and environmental, safety and occupational health (ESOH) requirements, and the associated costs and availability milestone schedule that support the capability. Describe how the system(s) will be moved either to or within the theater. Identify any lift constraints.

14. Other System Attributes. As appropriate, address attributes that tend to be design, cost, and risk drivers, including ESOH, HSI, embedded instrumentation, electronic attack (EA), information protection standards and IA and wartime reserve mode (WARM) requirements. In addition, address conventional and initial nuclear weapons effects; nuclear, biological and chemical contamination (NBCC) survivability; natural environmental factors (such as climatic, terrain and oceanographic factors); and unplanned stimuli (such as fast cook-off, bullet impact and sympathetic detonation). Address safety issues regarding hazards of electromagnetic radiation to ordnance (HERO). Define the expected mission capability (e.g., full, percent degraded) in the various environments. Include applicable safety parameters, such as those related to system, nuclear, explosive and flight safety. Identify physical and operational security needs. When appropriate, identify the weather, oceanographic and astrogeophysical support needs throughout the program's expected lifecycle. Include data accuracy and forecast needs. For intelligence, surveillance, and reconnaissance (ISR) platforms, address information protection standards. Describe the non-IT/NSS capabilities required for allied and coalition operations, identify the potentially applicable US-ratified international standardization agreements and provide an initial indication of which ones will be incorporated in the system requirements (references e and r).

15. Program Affordability. The affordability determination is made as part of the cost assessment in the JCIDS analysis. Cost will be included in the CDD as lifecycle cost or, if available, total ownership cost. It will include all associated system(s) DOTMLPF and policy costs. Inclusion of cost allows the sponsor to emphasize affordability in the proposed program. In addition, the discussion on affordability should articulate the CDD sponsor funding level estimates for developing, producing and sustaining the desired capability. The cost figure should be stated in terms of a threshold and objective capability (not necessarily a KPP) to provide flexibility for program evolution and cost as an independent variable (CAIV) tradeoff studies. If cost is identified as a KPP, include it in the KPP summary table. Cite applicable cost analyses conducted to date.

Mandatory Appendices

Appendix A. Architecture Products. Include the required architecture framework view products developed from integrated architectures. Formatting instructions are provided in reference i.

- Mandatory

- AV-1, OV-1, OV-2, OV-4, OV-5, OV-6C
- SV-2, SV-4, SV-5, SV-6
- TV-1 (Draft IT Standards Profile generated by the DOD IT Standards Registry (DISR) online)
- NCOW Reference Model Compliance Statement
- Initial Interconnectivity and Interoperability Capability (IIC) Profile (Interconnectivity Profile)
- NR-KPP statement
- IA Statement of Compliance
- Key Interface Profile (KIP) Declaration (list of KIPs that apply to system)

- As Available: OV-7, SV-11, TV-2

Note: Include only those architectural views not presented in the document.

Note: The Joint Staff may waive the requirement for certain architecture views on a case-by-case basis based on the proposed JPD and presence or absence of a NR-KPP.

Appendix B. References

Appendix C. Acronym List

Other Appendices or Annexes. As required to provide supporting information not included in the body of the CDD.

(INTENTIONALLY BLANK)

ENCLOSURE G

CAPABILITY PRODUCTION DOCUMENT

1. General

a. The CPD is the sponsor's primary means of providing authoritative, testable capabilities for the Production and Deployment phase of an acquisition program. A CPD is finalized after design readiness review and is validated and approved before the Milestone C acquisition decision (see reference c for DOD space programs). Because a CPD is finalized after design readiness review and after the majority of capability development, it is normally not appropriate to introduce new requirements at this point. New requirements should be included in the next increment in an evolutionary program or in a future modification or upgrade if no additional increments are planned. The development of the CPD is guided by the integrated architectures; applicable JCDs, ICDs and CDD; AoA and/or supporting analytical results; developmental and operational test results; and the design readiness review. The CPD must include a description of the DOTMLPF and policy impacts and constraints. The key documents associated with the CPD are identified in Table G-1.

b. The CPD captures the information necessary to support production, testing and deployment of an affordable and supportable increment within an acquisition strategy. The CPD provides the operational performance attributes necessary for the acquisition community to produce a single increment of a specific system. It presents performance attributes, including KPP, to guide the production and deployment of the current increment. If the plan requires a single step to deliver the full capability, the KPPs will apply to the entire system(s). There may be cases where the validation authority decides it is appropriate to use a combined CPD to describe closely interdependent systems that provide the desired capability. Each increment must provide an operationally effective, suitable and useful capability in the intended environment, commensurate with the investment.

c. The CPD refines the threshold and objective values for performance attributes and KPPs that were validated in the CDD for the production increment. Each production threshold listed in the CPD depicts the minimum performance that the program manager is expected to deliver for the increment based on the system design subsequent to the design readiness review. The refinement of performance attributes and KPPs is the most significant difference between the CDD and the CPD and is discussed further in paragraph 9, below.

Predecessor Documents and Information
Family of Joint Future Concepts and CONOPS
Design Readiness Review (see reference c for DOD space programs)
System Threat Assessment
ISP (from Milestone B)
AoA Report
Completed automated standards profile as required in reference h
JCDs and ICDs
CDD
Integrated architectures
MUAs for ACTDs or ATDs
Capability roadmap

Dependent Documents
Acquisition Strategy (updated for Milestone C)
APB for Milestone C of the current increment
Clinger-Cohen Certification for Major Automated Information Systems (updated for Milestone C)
DD Form 1494 (required to obtain spectrum certification)
Test and Evaluation Master Plan (updated for Milestone C)
ISP (Updated for Milestone C)
Capability roadmap
System engineering plan
Manpower estimate

Table G-1. CPD Linkage to Program Documents

d. As in the CDD, care must be taken to stabilize and not over specify attributes in the CPD. Only the most significant items should be designated as performance attributes with threshold and objective values. To provide the needed performance attributes, the program manager will develop details in the technical documentation.

e. When the sponsor of an ACTD or ATD determines that the demonstration is complete, and the capability is ready for immediate fielding for other than limited quantities, a CPD will be developed to support approval for production and fielding. The MUA, which is completed at the end of the ACTD or ATD, will be used to guide the development of the CPD. The CPD will then be submitted for staffing and approval prior to the Milestone C decision.

f. Each CPD applies to a single increment of a single system or SoS. When the CPD is part of a FoS approach, the CPD will identify the source ICD, AoA and/or supporting analyses results, and any related CDDs and/or CPDs that

are necessary to deliver the required capability and to allow the required program synchronization.

2. CPD Focus. The CPD may refine and revise the required operational capabilities that were listed in the CDD. CPD KPPs must be inserted verbatim into the performance section of the acquisition strategy and the APB. MOE and suitability criteria developed for the TEMP and refined during the SDD phase are updated as necessary to support Milestone C and initial operational test and evaluation. The MOE and suitability criteria are based on validated performance criteria in the CPD (for DOD space programs the TEMP is required for Key Decision Point C; see reference c).

3. CPD Development and Documentation

a. The CPD is finalized after completion of the design readiness review. The CPD is an entrance criteria item that is necessary for each Milestone C acquisition decision (see reference c for DOD space programs).

b. The CPD sponsor will apply lessons learned during the SDD phase, lessons learned from previous increments, risk reduction activities, MUAs for ACTDs and ATDs, experimentation, test and evaluation, modeling and simulation, capability and schedule tradeoffs and affordability analysis in the delivery of the CPD capabilities. The previously defined KPPs may be refined (with a rationale provided) and should be tailored to the proposed system to be procured (e.g., range, probability of kill, platform survivability, timing of the need).

c. The CPD sponsor, in coordination and collaboration with the appropriate DOD components, agencies, FCB and applicable JCD leads, will prepare the CPD. Continuous collaboration with the systems acquisition program manager is essential. The CPD sponsor also will collaborate with sponsors of related CDDs and/or CPDs that are required in FoS and SoS solutions, particularly those generated from a common ICD. The CPD will include a description of the operational capability; threat; IT and NSS supportability; links to all applicable integrated architectures; required capabilities; program support; supportability; force structure; DOTMLPF and policy impact and constraints; and schedule and program affordability for the system (revised from the CDD).

d. CPD development should leverage off related analysis and development with the associated ISP required by reference g. As required capabilities are developed, the output from the information needs discovery process (reference g) should help develop the required architecture products and to identify the elements of required program support for inclusion in the CPD.

e. Draft and approved CPDs, both classified and unclassified, should be carefully marked to indicate whether the document is releasable to allies,

industry or the public. Early collaboration should be encouraged whenever possible.

f. CPD format and detailed content instructions are provided at Appendix A of this enclosure.

4. CPD Validation and Approval. The Gatekeeper, described in Enclosure C, will assign a JPD to each CPD. The JPD determines the validation and approval authorities for the CPD. Delegation of approval authority will not normally be granted beyond a single increment in an evolutionary acquisition.

5. Certifications. JROC Interest CPDs will receive applicable intelligence, IM and IT and NSS interoperability and supportability certifications (in accordance with Enclosure C) prior to JROC validation. Joint Integration CPDs also will receive the applicable certifications before they are returned to the sponsoring component for validation and approval.

6. Formal CPD Staffing. The first step in obtaining validation and approval is the formal review of the document. The staffing process is described in Enclosure C. Supporting documentation, such as the AoA results, ICD, CDD and any additional previously approved documents should be made available electronically for inclusion in the package. If an AoA has not been conducted, an explanation and an electronic copy of whatever alternative analysis has been performed (or planned) will be made available or attached.

7. CPD Review and Approval. A CPD is written, validated, and approved after the design readiness review to support the Milestone C decision for each production increment. Unlike the CDD, the CPD is always specific to a single production increment and is normally not updated.

8. CPD Publication and Archiving. Approved CPDs (SECRET and below), regardless of JPD, will be posted to the KM/DS tool so that all JCIDS documents are maintained in a single location.

9. System Capabilities. The CPD identifies, in threshold-objective format, the specific attributes that contribute most significantly to the desired operational capability. The focus of these attributes is fundamentally different from that of the attributes provided in the CDD. The CDD values were used to guide the acquisition community in making tradeoff decisions between the threshold and objective levels of the stated attributes. After design readiness review, these tradeoff decisions have been made, and a more precise determination of acceptable performance can be stated in the CPD. A range of expected performance, provided by the program manager, is specified in the production threshold and objective values for each attribute or KPP.

a. The production threshold and objective values specified for the attributes in the CPD may be refinements of the development threshold and objective

values documented in the CDD. Each production threshold value listed in the CPD represents the minimum performance that the program manager is expected to deliver for the increment based on the post design readiness review.

b. Each production threshold value may be adjusted, as required, to account for post-design readiness review estimates and for manufacturing, technical and other risks. KPP and non-KPP threshold values in the CPD are generally expected to be equal to or better than the corresponding CDD threshold values. However, there may be cases where CDD KPP and/or non-KPP threshold values are reduced in a CPD. When this occurs, the following questions must be answered in the CPD:

(1) Will the capability still provide sufficient operational effectiveness as defined in the source ICD?

(2) If the new capability will replace a fielded capability, will it still provide more overall operational effectiveness than the fielded capability?

(3) Is this proposal still a good way to close the capability gap, or should this approach be abandoned in favor of another materiel or non-materiel alternative?

(4) How will the reduced capability impact on related CDDs and/or CPDs and fielded systems?

c. Additionally, when a CDD KPP threshold is lowered in a CPD, the validation authority must be briefed on the answers to these questions before the CPD is approved. Components will budget sufficient funds to achieve all stated production thresholds, as a minimum.

d. In evolutionary acquisition, it is expected that the overall operational effectiveness of a system will improve between increments. This can be realized by increasing threshold values of some or all of the fielded attributes, and/or by adding new attributes to a fielded capability. A decrease in KPP or non-KPP thresholds to accommodate the introduction of an additional capability is not normally desired. However, there can be cases where this is acceptable as long as the overall operational effectiveness is improved.

e. The production objective value is the desired operational goal for an attribute or KPP in the current increment, beyond which any gain in military utility for the increment does not warrant additional expenditure.

10. Key Performance Parameters. The CPD should contain those KPPs that capture the attributes needed to achieve the overall desired capabilities and should be consistent with the KPPs specified in the CDD. In modifying the KPPs and their values, the sponsor will leverage the expertise of the operational

users and the acquisition community. Guidance on the development of KPPs is provided in Enclosure B.

a. CPD KPPs are inserted verbatim into the performance section of the APB. KPPs will be developed relating to each of the key characteristics as identified in the JOpsC when the system contributes to those capabilities. A NR-KPP will be developed for all IT and NSS that are used to enter, process, store, display or transmit DOD information, regardless of classification or sensitivity, except those that do not communicate with external systems, including Automated Information Systems in accordance with references f, g and h.

b. The CPD should document how the CPD's KPPs are responsive to applicable JCD capabilities and key metrics. For JCDs to be effective, it is essential that all JCD sponsors review all related JROC Interest and Joint Integration CDDs and CPDs for applicability to their JCD. This support is important because CDD and CPD authors cannot in all cases be expected to understand the full impact and scope of every JCD.

APPENDIX A TO ENCLOSURE G

CAPABILITY PRODUCTION DOCUMENT FORMAT

CLASSIFICATION OR UNCLASSIFIED

CAPABILITY PRODUCTION DOCUMENT
FOR
TITLE

Increment: _____

ACAT: _____

Validation Authority: _____

Approval Authority: _____

Milestone Decision Authority: _____

Designation: JROC Interest/Joint Integration/Independent

Prepared for Milestone C Decision (or specify other acquisition decision point)

Date

Note: Each subparagraph should be numbered to facilitate correlation and traceability and for ease of identifying issues during staffing. CPDs must be submitted in Microsoft Word (6.0 or greater) format. Provide the SV-6 as a separate file in Microsoft Excel format for ease of importation into analysis tools. All CPDs must be clearly labeled with draft version number, increment, and date and must include any caveats regarding releasability, even if unclassified. The intent is to share CPDs with allies and industry wherever possible at an appropriate time in the acquisition process. Draft documents will be submitted with line numbers displayed. Integrated architecture products will be embedded in the Microsoft Word file for ease of review during the staffing process. Ideally, the body of the CPD should be no more than 30 pages long.

Executive Summary (2 pages maximum)

Table of Contents (with list of tables, figures and appendices)

Points of Contact

1. Capability Discussion. Cite the applicable ICD and CDD (if applicable) and/or MUAs and provide an overview of the capability gap in terms of relevant range of military operations and timeframe under consideration. Describe the capability that the program delivers and how it relates to the key characteristics identified in the Family of Joint Future Concepts, CONOPS and integrated architectures. Discuss how the current increment contributes to the required capability.

a. Discuss the operating environment of the system. Address how the capability will be employed on the battlefield and where it will be employed and/or based.

b. If the CPD is part of a FoS or SoS solution, discuss the source JCD or ICD and the related CDDs, CPDs, integrating DOTMLPF and policy changes and required synchronization.

c. Cite any additional previously approved JCIDS documents pertaining to the proposed system.

2. Analysis Summary. Summarize all analyses, that is, AoA and/or other support analysis conducted to determine the system attributes and to identify the KPPs. Include the alternatives, objective, the criteria, assumptions, recommendation and conclusion. A description of the analysis methodology and the analysis results shall be included in an appendix.

3. CONOPS Summary. Describe the relevant part of the Family of Joint Future Concepts, CONOPS and/or UCP-assigned mission this capability contributes to, what operational outcomes it provides, what affects it must produce to achieve those outcomes, how it complements the integrated joint warfighting force and what enabling capabilities are required to achieve its desired operational outcomes.

4. Threat Summary. Summarize the projected threat environment and the specific threat capabilities to be countered. Include the nature of the threat, threat tactics and projected threat capabilities (lethal and nonlethal) over time. Programs designated as ACAT ID (or potential ACAT ID) must incorporate DIA-validated threat references. All other programs may use Service intelligence center-approved products and data. Summarize the organizational resources that provided threat support to capability development efforts. Contact the DIA's Defense Warning Office, Acquisition Support Division for assistance (DSN: 428-4521;
SIPRNET: http://www.dia.smil.mil/admin/di/dwo/POC.shtml or
JWICS: http://www.dia.ic.gov/admin/di/dwo/Link.shtml).

5. Program Summary. Provide a summary of the overall program strategy for reaching full capability and the relationship between the production increment addressed by the current CPD and any other increments of the program.

6. System Capabilities Required for the Current Increment

a. Provide a description for each attribute and list each attribute in a separately numbered subparagraph. Include a supporting rationale for the requirement and cite any analytic references. When appropriate, the description should include any unique operating environments for the system. If the CPD is part of a SoS solution, it must describe the attributes for the SoS

level of performance and any unique attributes for each of the constituent systems.

b. Present each attribute in output-oriented, measurable and testable terms. For each attribute, provide production threshold and objective values. The program manager can use this information to provide incentives for the production contractor to enhance performance through production improvements.

c. Provide tables summarizing specified KPPs and additional performance attributes in threshold-objective format, as depicted below. For each KPP, identify the key characteristics as identified in the JOpsC. Also provide a general discussion of the additional performance attributes.

JOpsC key characteristics	**Key Performance Parameter**	**Production Threshold**	**Production Objective**
	KPP 1	Value	Value
	KPP 2	Value	Value
	KPP 3	Value	Value

Table X.X. Example Key Performance Parameter Table

Attribute	**Production Threshold**	**Production Objective**
Attribute	Value	Value
Attribute	Value	Value
Attribute	Value	Value

Table X.X. Additional Attributes

d. Develop the CPD NR-KPP, in accordance with the procedures described in references f, g and h, from the integrated architecture.

7. FoS and SoS Synchronization. In FoS and SoS solutions, the CPD sponsor is responsible for ensuring that related solutions, specified in other CDDs and CPDs, remain compatible and that the development is synchronized. These related solutions should tie to a common ICD. The CPD sponsor is also responsible for ensuring that the CPD accurately captures the desired capabilities described in applicable JCDs.

a. Discuss the relationship of the system described in this CPD to other systems contributing to the capability(s). Discuss any overarching DOTMLPF and policy changes that are required to make the FoS and/or SoS an effective military capability.

b. Provide a table that briefly describes the contribution this CPD makes to the capabilities described in the applicable ICDs and the relationships to CDDs

and CPDs that also support these capabilities. For these interfaces to be effective, it is essential the CPD sponsor review all related JROC Interest and Joint Integration ICDs, CDDs and CPDs for applicability to the FoS or SoS addressed by this CPD.

Capability	**CPD Contribution**	**Related CDDs**	**Related CPDs**
ICD Capability Description #1	Brief Description of the Contribution Made by this CPD	CDD Title	CPD Title
ICD Capability Description #2	Brief Description of the Contribution Made by this CPD	CDD Title	CPD Title
JCD Capability	Brief Description of the Contribution Made by this CPD	CDD Title	CPD Title

Table X-X. Supported ICDs or JCDs and Related CDDs or CPDs

8. IT and NSS Supportability. For systems that receive or transmit information, provide an estimate of the expected bandwidth and quality of service requirements for support of the system(s) (on either a per-unit or an aggregate basis, as appropriate). The estimate provided in the CPD should be derived from the ISP updated for Milestone C and a significant improvement over the rough-order-of-magnitude estimate provided in the CDD. This description must explicitly distinguish IT and NSS support to be acquired as part of this program from the IT and NSS support to be provided to the acquired system through other systems or programs (reference g). The sponsor will identify the communities of interest (reference o) with which he or she is working to make the capability's data visible, accessible and understandable to other users on the GIG.

9. Intelligence Supportability. Identify, as specifically as possible, all projected requirements for intelligence support throughout the expected acquisition lifecycle in accordance with the format and content prescribed by reference m unless a waiver has been granted by J-2. Contact J-2 Intelligence Requirements Certification Office (J2P/IRCO) for assistance (DSN 225-4693/8085, SIPRNET http://www.dia.smil.mil/intel/j2/j2p/irco/main.html or JWICS http://j2irco.dia.ic.gov/irco/open_docs.html).

10. E3 and Spectrum Supportability. Define the electromagnetic spectrum requirements that the system must meet to assure spectrum supportability in accordance with reference j. Describe the electromagnetic environment in which the system will operate and coexist with other US, allied, coalition, government and non-government systems. Identify potential operational issues regarding electromagnetic interference from threat emitters and from other E3

effects such as electromagnetic pulse. For spectrum-dependent systems, equipment spectrum certification is required to assure adequate access to the electromagnetic spectrum and sufficient availability of frequencies from host nations.

11. Assets Required to Achieve FOC. Describe the types and quantities of assets required to attain FOC. Identify the operational units (including other Services or government agencies, if appropriate) that will employ the capability, and define the asset quantities (including spares, training and support equipment, if appropriate) required to achieve FOC.

12. Schedule and IOC and FOC Definitions. Define the actions that, when complete, will constitute attainment of IOC and FOC for the current increment. Specify the target date for IOC attainment.

13. Other DOTMLPF and Policy Considerations. Discuss any additional DOTMLPF and policy implications associated with fielding the system that have not already been addressed in the CPD, to include those approaches that would impact CONOPS or plans within a combatant command's area of responsibility. Discuss HSI considerations that have a major impact on system effectiveness, suitability and affordability. Describe, at an appropriate level of detail, the key logistics criteria, such as system reliability, maintainability, operational availability and supportability that will help minimize the system's logistics footprint, enhance its mobility and reduce the total ownership cost. Detail any basing needs (forward and main operating bases, institutional training base and depot requirements). Specify facility, shelter, supporting infrastructure, ESOH requirements and the associated costs and availability milestone schedule that support the capability or system. Describe how the system will be moved either to or within the theater. Identify any lift constraints.

14. Other System Attributes. As appropriate, address attributes that tend to be design, cost and risk drivers, including ESOH, HSI, embedded instrumentation, EA, IA and WARM requirements. In addition, address conventional and initial nuclear weapons effects; NBCC survivability; natural environmental conditions (such as climatic, terrain and oceanographic factors); and unplanned stimuli (such as fast cook-off, bullet impact and sympathetic detonation). Address safety issues regarding HERO. Define the expected mission capability (e.g., full, percent degraded) in the various environments. Include applicable safety parameters, such as those related to system, nuclear, explosive and flight safety. Identify physical and operational security needs. When appropriate, identify the weather, oceanographic and astrogeophysical support needs throughout the program's expected lifecycle. Include data accuracy and forecast needs. For ISR platforms, address information protection standards.

15. Program Affordability. The affordability determination is made as part of the cost assessment in the JCIDS analysis. Cost will be included in the CPD as life-cycle cost. The cost will include all associated DOTMLPF and policy costs. Inclusion of cost allows the DOD component sponsor to emphasize affordability in the proposed program. In addition, the discussion on affordability should articulate the CPD sponsor's estimates of the appropriate funding level for developing, producing, and sustaining the desired capability. The cost figure should be stated in terms of a threshold and objective capability (not necessarily a KPP) to provide flexibility for program evolution and CAIV tradeoff studies. If cost is identified as a KPP, include it in the KPP summary table. Cite applicable cost analyses conducted to date.

Mandatory Appendices

Appendix A. Architecture Products. Include the required architecture framework view products developed from integrated architectures. Formatting instructions are provided in reference i.

- Mandatory:
  - AV-1, OV-1, OV-2, OV-4, OV-5, OV-6C, OV-7
  - SV-2, SV-4, SV-5, SV-6, SV-11
  - TV-1 (Final IT Standards Profile generated by the DOD Information Technology Standards Registry (DISRonline)), TV-2
  - NCOW Reference Model Compliance Statement
  - Final IIC Profile (Interoperability Capability Profile)
  - NR-KPP statement
  - IA Statement of Compliance
  - KIP Declaration (list of KIPs that apply to the system)

Note: Include only those architectural views not presented in the document.

Note: The Joint Staff may waive the requirement for certain architecture views on a case-by-case basis based on the proposed JPD and presence or absence of a NR-KPP.

Appendix B. References

Appendix C. Acronym List

Other Appendices or Annexes. As required to provide supporting information not included in the body of the CPD.

(INTENTIONALLY BLANK)

ENCLOSURE H

JOINT DOTMLPF CHANGE RECOMMENDATION

1. Purpose. This enclosure describes the procedures and responsibilities for organizations involved in bringing joint DCRs to the JROC for consideration.

a. This guidance applies to DOTMLPF changes that are outside the scope or oversight of a new defense acquisition program.

b. The procedures outlined in this enclosure may also be used for processing DCRs that require additional numbers of commercial or nondevelopmental items produced or deployed via the Defense Acquisition System. Additionally, these procedures may be used to support increasing quantities of existing items or commodities (e.g., increases to manpower, operational tempo, spare parts, fuel supply, recruiting, etc.) to meet an established operational need.

c. Joint DCRs may not be submitted to justify out-of-cycle budget requests.

2. Procedures -- Integrating Joint DCRs Into the JROC Process

a. Generating Joint DCRs. Recommendations for joint DOTMLPF and policy changes may be received from a variety of sources including, but not limited to:

(1) Joint and Service experimentation

(2) Assessments by FCBs, battle laboratories, JROC-directed special study groups, combatant commanders, Services, Joint Staff, OSD and Defense agencies

(3) Review of existing ICDs, CDDs and CPDs

(4) An FSA

(5) Combatant commanders' issues collection and prioritization, technology demonstrations, warfighting lessons learned and exercises

b. Joint DOTMLPF Definitions. Joint DCRs should categorize their recommendations using the following definitions of the elements of DOTMLPF:

(1) Joint Doctrine. Fundamental principles that guide the employment of US military forces in coordinated action toward a common objective. Though

neither policy nor strategy, joint doctrine serves to make US policy and strategy effective in the application of US military power. Joint doctrine is based on extant capabilities. Joint doctrine is authoritative guidance and will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise (CJCSI 5120.02).

(2) Joint Organization. A [joint] unit or element with varied functions enabled by a structure through which individuals cooperate systematically to accomplish a common mission and directly provide or support [joint] warfighting capabilities. Subordinate units and elements coordinate with other units and elements and, as a whole, enable the higher-level [joint] unit or element to accomplish its mission. This includes the joint manpower (military, civilian and contractor support) required to operate, sustain and reconstitute joint warfighting capabilities.

(3) Joint Training. Military training based on joint doctrine or joint tactics, techniques and procedures to prepare joint forces and/or joint staffs to respond to strategic and operational requirements deemed necessary by combatant commanders to execute their assigned missions. Joint training involves forces of two or more Military Departments interacting with a combatant commander or subordinate joint force commander; involves joint forces and/or joint staffs; and is conducted using joint doctrine or joint tactics, techniques and procedures (CJCSM 3500.03A).

(4) Joint Materiel. All items (including ships, tanks, self-propelled weapons, aircraft, etc., and related spares, repair parts and support equipment, but excluding real property, installations and utilities) necessary to equip, operate, maintain and support [joint] military activities without distinction as to its application for administrative or combat purposes (JP 1-02).

(5) Joint Leadership and Education. Professional development of the joint commander is the product of a learning continuum that comprises training, experience, education and self-improvement. The role of (joint) professional military education is to provide the education needed to complement training, experience and self-improvement to produce the most professionally competent individual possible.

(6) Joint Personnel. The personnel component primarily ensures that qualified personnel exist to support joint capabilities. This is accomplished through synchronized efforts of joint force commanders and Service components to optimize personnel support to the joint force to ensure success of ongoing peacetime, contingency and wartime operations.

(7) Joint Facilities. Real property consisting of one or more of the following: a building, a structure, a utility system, pavement and underlying

land. Key facilities are selected command installations and industrial facilities of primary importance to the support of military operations or military production programs. A key facilities list is prepared under the policy direction of the Joint Chiefs of Staff.

c. Format Standards. Joint DCR documents will be uniform across all DOD organizations. A sample template to assist in preparing recommendations is found in Appendix A to this enclosure.

d. Submitting Recommendations. Recommendations for joint DOTMLPF and policy changes are prepared in accordance with the above paragraph and submitted to the Joint Staff through KM/DS in accordance with the procedures in Enclosure C. The document will be the DOD component flag-level coordinated position and will be forwarded with a cover letter identifying the document, date, any schedule drivers and a working-level point of contact. All documents entering the review process are considered draft and do not require a formal signature until after JROC consideration.

3. Formal Change Recommendation Review Process. Once a document enters the formal JROC review process, it will be staffed to all combatant commanders, Services, Joint Staff, OSD and Defense agencies for review, endorsement and comment.

a. Flag Review and FPO Endorsement

(1) Joint Staff/J-8 JCD will review and verify the format for accuracy and completeness. J-8 will staff the draft document via KM/DS for combatant commanders, Services, Joint Staff, OSD and appropriate Defense agency flag review.

(2) FPO (J-1: Personnel and Manpower; J-4: Facilities; J-7: Doctrine, Leadership and Education, and Training; J-8: Organization and Materiel) will use the JROC-approved criteria in reference q to provide the following endorsement statement to the lead FCB via memorandum (FPOs will withhold endorsement of a joint DCR until critical comments are resolved):

> "The Sponsor (combatant commander, Service and/or agency), in coordination with the applicable FPO, has adequately addressed potential impacts on joint, multinational and interagency warfighting and other operations with respect to joint _____ ("Training" for example) resulting from the [implementation of this concept] or [acquisition and employment of this system]."

b. JROC Briefing and Schedule. Briefings for the FCB, JCB and JROC will be prepared in accordance with reference p.

c. JROC Recommendation to the Chairman. The JROC Secretary will consolidate the JROC's recommendations (including the recommended lead Military Department, combatant command or Defense agency) and forward a JROCM endorsing the joint DCR along with the sponsor's change recommendation to the Chairman for approval.

4. Implementation of Joint DCRs. The progress of the implementation of joint DCRs will be tracked through a process supported by the Joint Transformation Integration System (JTIS). JTIS will be used to track all actions associated with the implementation of joint DCRs and their current status. A quarterly JTIS Review meeting will be scheduled with the JCB to review the status of outstanding joint DCRs within JTIS, and serve as the executive oversight committee for their implementation. Issues that cannot be resolved by the JCB may be elevated to the JROC for resolution.

a. Implementation Overview. Joint DCRs that have been approved for implementation by the JROC will be assigned to the JCB, chaired by the Director, Joint Staff/J-8 (DJ-8), for oversight and monitoring of co-evolution and implementation. The JCB provides substantive oversight of DOTMLPF actions to ensure that implementation activities within each of the seven critical considerations remain focused on achieving the integrated result described in the recommendation. The DJ-8 and the Joint Staff DOTMLPF FPOs share in the implementation of an approved recommendation. In cases where the JROC appoints a sponsor, the FPOs and DJ-8 would support this sponsor in its effort to co-evolve the joint DCRs. The DJ-8, the respective joint DOTMLPF FPOs and the sponsor will work together to create an implementation plan and timeline. The key implementation tasks identified in the approved recommendation serve as a starting point for this plan and timeline. The DJ-8, in coordination with the joint DOTMLPF FPOs, will ensure that each task is completed in accordance with the timeline and provide status and visibility into the process to senior leaders. The DJ-8, in coordination with the FPOs, also makes recommendations to the JCB for modifications to existing timelines based on the synchronization of tasks. The Joint Staff DOTMLPF FPOs are responsible for coordinating assigned tasks via their existing processes and for providing periodic updates on their progress to the DJ-8 and the JCB. These recommendations, along with the status of all ongoing implementation activities, are provided to the JCB at regularly scheduled sessions. If unresolved issues occur, the JCB will seek JROC guidance for resolution.

b. Implementation Management

(1) Management Architecture

(a) Director, Joint Staff/J-8. The DJ-8 is the CJCS Executive Agent and primary Joint Staff proponent for implementation and system integration. This role includes responsibility for implementation policy and overall program

management as well as monitoring the implementation of recommendations for the JCB.

(b) USJFCOM. The Secretary of Defense has designated USJFCOM as the "Executive Agent for Joint Warfighting Experimentation within the CJCS program to implement future warfighting visions." USJFCOM "is responsible to the Chairman of the Joint Chiefs of Staff for creating and refining future joint warfighting concepts and integration of Service efforts in support of future CJCS joint warfighting visions."

(c) Joint Requirements Oversight Council. The JROC charters and oversees the work of FCBs in developing overarching joint operational, functional and integrating concepts for the joint mission areas during the joint concept development component of this process. Joint DCRs resulting from joint concept development, joint experimentation and assessment are integrated into the JROC's deliberations on identifying, developing, validating and prioritizing joint capabilities.

(d) Joint DOTMLPF FPOs. Directors so designated are responsible for the execution of their respective joint functional process to meet the implementation of the recommended changes to joint DOTMLPF. FPOs will provide assessment of their specific functional process during their review of proposed joint DCRs. They will support the JCB and the DJ-8 in executing their integration and implementation responsibilities of approved joint DOTMLPF changes. The CJCS-designated joint DOTMLPF FPOs are listed in Figure H-1.

Critical Consideration	DOTMLPF Functional Process Owners
Joint Doctrine	Joint Staff/J-7
Joint Organizations	Joint Staff/J-8 (with J-1 & J-5 support)
Joint Training	Joint Staff/J-7
Joint Materiel	Joint Staff/J-8
Joint Leadership and Education	Joint Staff/J-7
Joint Personnel	Joint Staff/J-1
Joint Facilities	Joint Staff/J-4

Figure H-1. Joint Staff DOTMLPF FPOs

(e) DOTMLPF Action Review. Review of DOTMLPF actions will be conducted at the JCB. Combat support agencies and combatant commands will be invited to address appropriate DOTMLPF and policy actions and implementation concerns. The JCB accepts the approved recommendations and assigns action for implementation for the Chairman. The JCB is a forum to monitor and coordinate the activities and events associated with implementing the approved joint DOTMLPF and policy actions.

(2) Joint DOTMLPF Implementation Rhythm. To successfully direct the joint DCR implementation process, a series of coordination meetings and briefings will be conducted periodically to ensure senior leadership is kept

informed about the status of joint DCR implementation. This flow of information, through significant meetings and events, is considered the joint DOTMLPF implementation rhythm. Captured below are the events defined in terms of purpose and sponsorship.

(a) DOTMLPF Action Review. Quarterly update will be provided to the DJ-8, Service G/FO representatives, the USJFCOM G/FO representative and joint DOTMLPF FPOs. The purpose is to inform the DJ-8 and JCB of ongoing joint DOTMLPF activities and a forum to monitor and coordinate the activities and events associated with implementing the joint DCRs. It will provide status of approved joint DCR implementation and receive guidance and direction for future activities. DJ-8 is the sponsor.

(b) Roles and Responsibilities. Outlined below are the roles and responsibilities to support the implementation of joint DCRs.

1. Responsibilities Common to all Joint Staff J-Directorates. As a member of the Joint Staff, review all joint DCRs submitted to the Joint Staff/J-8. Participate in the joint DOTMLPF implementation events as required.

2. Specific Roles and Responsibilities for Joint Staff Directorates

a. Director, Joint Staff/J-1 (DJ-1). Acts as the joint DOTMLPF FPO for the implementation of the joint DOTMLPF critical consideration-personnel ("P") and the critical consideration-organization ("O") where joint manpower changes are being recommended. Supports the JROC and the DJ-8 in executing their integration and implementation responsibilities. Provides endorsement for the JROC of the "P" functional process during their review of proposed joint DCRs. Ensures ICDs, CDDs and CPDs reflect current endorsement requirements. Supports the J-8 in the evaluation of proposed joint manpower changes.

b. Director, Joint Staff/J-4. Acts as the joint DOTMLPF FPO for the implementation of the joint DOTMLPF critical consideration joint facilities ("F"). Support the JROC and the DJ-8 in executing their integration and implementation responsibilities. Provides endorsement for the JROC of the "F" functional process during their review of proposed joint DCRs. Ensures ICDs, CDDs and CPDs reflect current endorsement requirements.

c. Director, Joint Staff/J-5 (DJ-5). Supports the DJ-8 in his DOTMLPF FPO for the implementation of the joint DOTMLPF "O".

d. Director, Joint Staff/J-7. Acts as the joint DOTMLPF FPO for the implementation of the joint DOTMLPF critical considerations of joint Doctrine ("D"), joint Training ("T"), and Leadership and Education ("L"). Provides endorsement for the JROC of "D," "T" and "L" functional processes during their review of proposed joint DCRs. Ensures ICDs, CDDs and CPDs reflect current endorsement requirements.

e. Director, Joint Staff/J-8

(1) Sponsors the DOTMLPF action review at the JCB.

(2) Acts as the CJCS representative to effect implementation and integration of all approved joint DCRs resulting from joint experimentation and assessments.

(3) Synchronizes joint DCR actions, establishes timelines and tasks appropriate agencies to ensure co-evolution of joint DOTMLPF and policy.

(4) Serves as the coordinator with the joint DOTMLPF FPOs in the implementation of approved recommendations.

(5) Engages and informs senior leadership on current status of joint DOTMLPF and policy implementation activities and supporting efforts across the Department of Defense.

(6) Acts as the joint DOTMLPF FPO for the implementation of the joint DOTMLPF critical consideration-materiel ("M") and "O" (with support from the DJ-1 and DJ-5). Provides endorsement for the JROC of the "M" and "O" functional process during their review of proposed joint DCRs. Ensures ICDs, CDDs and CPDs reflect current endorsement requirements.

f. Joint Staff Roles and Responsibilities of Joint DOTMLPF FPOs

(1) Provide endorsement for the JROC of their specific functional process during the review of proposed joint DCRs. Ensure requirements documents (ICDs, CDDs and CPDs) reflect current endorsement requirements.

(2) Work with the DJ-8 to construct an implementation plan and timeline for approved recommended joint DCRs.

(3) Execute assigned tasks to implement approved recommended changes to joint DOTMLPF and policy within their assigned areas of responsibility via the existing functional processes and data systems.

(4) Provide periodic status updates to the DJ-8, through the JCB, on the status of implementing approved changes to joint DOTMLPF and policy.

(5) Inform the DJ-8 promptly if any problems arise that may interfere with completion of assigned tasks.

g. Roles and Responsibilities of the FCBs

(1) Evaluate all joint DCRs assigned to their FCB as either lead or supporting, and incorporate the endorsements of the FPOs into their evaluation.

(2) Provide an endorsement recommendation to the JROC.

h. Roles and Responsibilities of Combatant Commands

(1) Participate in the joint DOTMLPF implementation process.

(2) Evaluate proposed joint DCRs and provide recommendations on changes and approval.

(3) (USJFCOM) Submit the necessary joint DCR packages documentation and the results of joint experiments to the JROC.

i. Roles and Responsibilities of the Services

(1) Support the JCB with a permanent flag officer and working group representative. Designate a Service office of primary responsibility for joint DOTMLPF implementation.

(2) Participate in the joint DOTMLPF implementation process.

j. Roles and Responsibilities of Defense Agencies. Participate in the joint DOTMLPF implementation process.

k. Roles and Responsibilities of Office of the Secretary of Defense. Participate in the joint DOTMLPF implementation process.

c. Resourcing Implementation. The Planning, Programming, Budgeting, and Execution System will be used to resource the approved joint DCRs. There are a variety of avenues available to combatant commands and the Joint Staff to influence the budget to resource those joint warfighting capabilities needed to achieve the joint force of the future.

APPENDIX A TO ENCLOSURE H

JOINT DOTMLPF CHANGE RECOMMENDATION FORMAT

Joint DOTMLPF Change
Recommendation for _____ (title)

Proposed Lead Agency is _____

Submitted by _____ (sponsor)

Date

Note: Each subparagraph should be numbered to facilitate correlation and traceability and for ease of identifying issues during staffing. DCRs must be submitted in Microsoft Word (6.0 or greater) format. All DCRs must be clearly labeled with draft version number, increment and date and must include any caveats regarding releasability, even if unclassified. The intent is to share DCRs with allies and industry wherever possible at an appropriate time in the acquisition process. Draft documents will be submitted with line numbers displayed. Integrated architecture products will be embedded in the Microsoft Word file for ease of review during the staffing process.

Executive Summary (2 pages maximum)

Table of Contents (with list of tables, figures, and appendices)

Points of Contact

1. Purpose. Provide a brief statement regarding the concept(s) addressed in this document.

2. Background. Frame the discussion by providing context. Briefly discuss the existing concepts, technologies, procedures, etc., to be influenced by the proposal in terms of opportunities to enhance or improve joint and/or multinational warfighting capabilities. Within the discussion, include the following (as applicable):

a. References to latest DOD strategic guidance or plans.

b. National Military Strategy, Joint Programming Guidance, Strategic Planning Guidance, Joint Intelligence Guidance, Service investment plans, etc.

c. The military task from the UJTL (reference s) associated with the proposal.

d. Published JROCMs relevant to the proposal, including linkage to JROC-approved operational concept(s) and architectures.

e. Combatant commander's integrated priorities list, joint monthly readiness reviews, quarterly reports to the Secretary of Defense, approved capabilities documents, etc., that validate the need to change joint DOTMLPF.

f. Other key decisions or events.

3. Description. Describe specifics of the proposal; address "who," "what," "when," "how," and "why." Clearly state, in terms of major objectives, what the recommendation is intended to accomplish and how it could widen the qualitative superiority of joint forces over potential adversaries, close a capability gap (existing or projected) or otherwise enhance joint warfighting capabilities. Also include discussion of the following, as applicable:

a. Changes to tactics, techniques and procedures.

b. Forces and systems affected and impact on interoperability.

c. Projected threat environment based on a DIA-validated threat.

d. If recommendation includes incorporating future technology (materiel component), include brief discussion of the maturity of the science and technology area(s) or future systems involved and a risk assessment of the approach.

4. Analysis Process. Provide an executive summary of the analysis methodology that led to these recommendations, including:

a. Research, experimentation and/or analysis plan.

b. Brief summary of the analytic techniques employed (i.e., modeling and simulation, statistical sampling, experimentation, real-world event lessons learned, etc.) to produce findings.

c. Discussion of facts and circumstances relating to adjustments made during execution of the approved research, experimentation and/or analysis plan (if applicable).

NOTE: Include full description of analysis methodology as an attachment to the change recommendation.

5. Joint DCR Findings and Proposed Implementation Plan. Use this section to describe research, experimentation and analysis findings, and the recommended implementation plan. List recommendations and implementation plans in terms of each applicable joint DOTMLPF element.

a. List recommendations in priority order.

b. For each recommendation, include:

(1) Discussion of improvement and/or benefit to joint warfighting and joint interoperability.

(2) Whether or how DCR would advance JOpsC-desired operational capabilities.

c. Proposed implementation timeframe:

(1) Discussion of relationships between recommendations and associated implementation timing (i.e., a joint organizational change has implications for a personnel change, which influences training plans, etc.).

(2) Resources required to implement (total resources, including additional research, hardware, DOD manpower, test range time, contractor support, etc.).

(3) Rough-order-of-magnitude total cost using template below, including cost by FY and type of funding (RDT&E, O&M, procurement) required (also, note paragraph 6, "Constraints," below).

DOTMLPF Change Recommendation	**FY xx (e.g. 08)**	**FY xx (e.g. 09)**	**FY xx (e.g. 10)**	**FY xx (e.g. 11)**	**FY xx (e.g. 12)**	**FY xx (e.g. 13)**	**FYDP Total**
Resources ($K)							
O&M							
RDT&E							
Procurement							
Manpower							
Total Funding							

Figure H-A-1. Summary of Resources Required to Implement (e.g., Doctrine) Change Recommendation Proposal

6. Constraints. Identify current or projected resource constraints with respect to implementing any element of the recommended findings in paragraph 5 above.

a. Highlight any proposed concept not currently addressed within the DOD program.

b. If specific recommendation is, for example, a change to joint training, and sufficient resources are already programmed to cover the total cost of

implementing the proposal including course development, instructor manpower and/or billets, instructor education, training facilities, reading materials, hardware and mock-ups, etc., then do not include in paragraph 6.

c. If there are additional unprogrammed costs associated with implementing any of the recommendations, include in paragraph 6.

d. For each joint DCR included in this paragraph, provide the following:

(1) Rough order of magnitude cost (total over the FYDP and by FY)

(2) Proposed resources required (RDT&E, O&M, procurement, billets and/or manpower, etc.)

(3) Potential source(s) for funding

7. Policy

a. Identify any DOD policy issues that would prevent the effective implementation of the recommended changes.

b. Identify the specific policy and the reason the proposed changes cannot comply with it.

c. Provide proposed changes to the policy.

d. Identify other potential implications from the changes in policy.

8. Issues

a. Identify any issues (DOD treaties, protocols, agreements, legal issues, DOD roles, missions and functions, interagency, multinational, etc.) associated with implementing any element of the recommended findings in paragraph 5.

b. Provide proposed resolution.

c. Identify interoperability implications.

d. Identify any unresolved combatant command, Service, Joint Staff, OSD and/or Defense agency issues resulting from staffing and/or coordinating the recommendation document.

e. Critical and substantive comments must be addressed.

9. Recommendation Summary

a. Recap the major findings and proposed implementation recommendations to advance future joint warfighting capabilities.

b. List alternative approaches and/or options to implement and resource recommendation(s), in relative order of priority. (Options are particularly appropriate when comprehensive DCRs are submitted with significant resource implications. However, DCRs without alternatives may be submitted when only one option is appropriate or practical.) As appropriate, alternatives will be tailored to the specific DCR(s) and focused on maximizing, for example:

(1) Scope

(a) All forces and/or systems

(b) All forces and/or systems within a particular specialty

(c) Specific performance of a subset of forces within a specialty or system

(2) Implementation schedule

(a) Maximum impact achieved at earliest practical date

(b) Impact achieved in phases

(3) Additional level of resources required (combined scope and schedule)

(a) Comprehensive approach

(b) Moderate

(c) Limited

(4) Recommended changes to DOD policy to effect the changes

c. Include a brief discussion of advantages and risks and/or disadvantages of each alternative.

10. Package Disposition

a. Provide the JROC an overall recommended option or way ahead.

b. Identify proposed lead combatant command, Service and/or Defense agency as required.

(INTENTIONALLY BLANK)

ENCLOSURE I

REFERENCES

a. CJCSI 3170.01 series, "Joint Capabilities Integration and Development System"

b. DODI 5000.2, 12 May 2003, "Operation of the Defense Acquisition System"

c. National Security Space Acquisition Policy 03-01, 6 October 2003, "Guidance for DOD Space System Acquisition Process"

d. CJCSI 3010.02 series, "Joint Future Concepts Process"

e. DODI 4120.24M, 18 June 1998, "Defense Standardization Program"

f. DODD 4630.5, 30 June 2004, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)"

g. DODI 4630.8, 5 May 2004, "Procedures for Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)"

h. CJCSI 6212.01 series, "Interoperability and Supportability of Information Technology and National Security Systems"

i. "DOD Architecture Framework, Version 1.0," 9 February 2004

j. DODD 4650.1, 8 June 2004, "Policy for the Management and Use of the Electromagnetic Spectrum"

k. DODD 8100.1, 19 September 2002, "Global Information Grid (GIG) Overarching Policy"

l. DOD 5200.1-PH, April 1997, "DOD Guide to Marking Classified Documents"

m. CJCSI 3312.01 series, "Joint Military Intelligence Requirements Certification"

n. Title 10, United States Code, section 2389

o. DODD 8320.02, 2 December 2004, "Data Sharing in a Net-Centric Department of Defense"

p. JROCM 098-00, February 2005, "JROC Administrative Guide"

q. JROCM 078-01, 8 May 2001, "Integration of Joint Experimentation (JE) and Joint Doctrine, Organization, Training, Materiel, Leadership/Education, Personnel, and Facilities (DOTMLPF) into the Joint Requirements Oversight Council (JROC) Process"

r. DODD 2010.6, 10 November 2004, "Materiel Interoperability with Allies and Coalition Partners"

s. CJCSM 3500.4 series, "Universal Joint Task List"

t. DODD 5000.1, 12 May 2003, "The Defense Acquisition System"

u. "Joint Operations Concepts," Secretary of Defense, November 2003

v. "Net Centric Operations Warfare Reference Model (NCOW-RM)", v 1.0, December 2003

GLOSSARY

PART I – ACRONYMS

ACAT	acquisition category
ACTD	Advanced Concept Technology Demonstration
AMA	analysis of materiel/non-materiel approaches
AoA	analysis of alternatives
APB	acquisition program baseline
ASD(NII)	Assistant Secretary of Defense (Networks and Information Integration)
ATD	Advanced Technology Demonstration
AT&L	acquisition, technology and logistics
AV	all views
CAD	Capabilities and Acquisition Division (Joint Staff/J-8)
CAIV	cost as an independent variable
CBA	capabilities-based assessment
CDD	capability development document
CIO	Chief Information Officer
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CJCSM	Chairman of the Joint Chiefs of Staff Manual
CONOPS	concept of operations
CPD	capability production document
DCR	doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF) change recommendation
DDFP	Deputy Director for Force Protection
DIA	Defense Intelligence Agency
DISA	Defense Information Systems Agency
DJ-1	Director, Joint Staff/J-1 (manpower and personnel directorate)
DJ-5	Director, Joint Staff/J-5 (strategic plans and policy directorate)
DJ-8	Director, Joint Staff/J-8 (force structure, resources and assessment directorate)
DOD	Department of Defense
DODD	Department of Defense directive
DODI	Department of Defense instruction
DOT&E	Director of Operational Test and Evaluation
DOTMLPF	doctrine, organization, training, materiel, leadership and education, personnel and facilities

DPS	Defense Planning Scenarios
E3	electromagnetic environmental effects
EA	electronic attack
ESOH	environmental, safety and occupational health
FAA	functional area analysis
FCB	Functional Capabilities Board
FNA	functional needs analysis
FOC	full operational capability
FoS	family of systems
FPO	functional process owner
FSA	functional solution analysis
G/FO	general/flag officer
GIG	Global Information Grid
HERO	hazards of electromagnetic radiation to ordinance
HSI	human systems integration
IA	information assurance
ICD	initial capabilities document
IIC	interconnectivity and interoperability capability
IM	insensitive munitions
IOC	initial operational capability
ISP	Information Support Plan
ISR	intelligence, surveillance and reconnaissance
IT	information technology
ITWA	Initial Threat Warning Assessment
J-8	Force Structure, Resources and Assessment Directorate
JCB	Joint Capabilities Board
JCD	joint capabilities document
JCIDS	Joint Capabilities Integration and Development System
JOpsC	Joint Operations Concepts
JPD	joint potential designator
JROC	Joint Requirements Oversight Council
JROCM	JROC memorandum
JSIMTP	Joint Staff Insensitive Munitions Technical Panel
JTIS	Joint Transformation Integration System
KIP	Key Interface Profiles
KM/DS	Knowledge Management/Decision Support
KPP	key performance parameter
MAIS	Major Automated Information System

MCEB	Military Communications Electronics Board
MDA	Milestone Decision Authority
MOE	measure of effectiveness
MRB	Mission Requirements Board
MUA	military utility assessment
NBCC	nuclear, biological, and chemical contamination
NGA	National Geospatial Intelligence Agency
NR-KPP	Net-Ready Key Performance Parameter
NRO	National Reconnaissance Office
NSA	National Security Agency
NSS	National Security Systems
O&M	operations and maintenance
OV	operational view
OPA&E	Office of Program Analysis and Evaluation
OUSD(AT&L)	Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics
PIA	post independent analysis
PM	program manager
RDT&E	research, development, test and evaluation
SDD	system development and demonstration
SoS	system of systems
SV	systems view
TEMP	Test and Evaluation Master Plan
TV	technical view
UAV	unmanned aerial vehicle
UCP	Unified Command Plan
UJTL	Universal Joint Task List
USecAF	Under Secretary of the Air Force
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
USD(I)	Under Secretary of Defense for Intelligence
USJFCOM	United States Joint Forces Command
WARM	wartime reserve mode

PART II — DEFINITIONS

acquisition category (ACAT) - Categories established to facilitate decentralized decision-making and execution and compliance with statutorily imposed requirements. The ACATs determine the level of review, decision authority and applicable procedures. Reference b provides the specific definition for each ACAT.

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 user capability needs, including the key performance parameters, which are copied verbatim from the capability development document.

Advanced Concept Technology Demonstration - A demonstration of the military utility of a significant new technology and an assessment to clearly establish operational utility and system integrity.

Advanced Technology Demonstration (ATD) - A demonstration of the maturity and potential of advanced technologies for enhanced military operational capability or cost-effectiveness. ATDs are identified, sponsored and funded by the Services and agencies.

all views - An architecture view that provides a summary and overview information. It describes the scope, purpose, intended users, environment depicted and analytical findings associated with the architecture.

analysis of alternatives (AoA) - The evaluation of the performance, operational effectiveness, operational suitability and estimated costs of alternative systems to meet a mission capability. The AoA assesses the advantages and disadvantages of alternatives being considered to satisfy capabilities, including the sensitivity of each alternative to possible changes in key assumptions or variables. The AoA is one of the key inputs to defining the system capabilities in the capability development document.

analysis of materiel/non-materiel approaches (AMA) - The Joint Capabilities Integration and Development System analysis to determine the best approach or combination of approaches to provide the desired capability or capabilities. Though the AMA is similar to an analysis of alternatives (AoA), it occurs earlier in the analytical process. Subsequent to approval of an initial capabilities document, which may lead to a potential acquisition category I/IA program, program analysis and evaluation provides specific guidance to refine this initial AMA into an AoA.

approval - The formal or official sanction of the identified capability described in the capability documentation. Approval also certifies that the documentation has been subject to the uniform process established by the DOD 5000 series.

architecture - The structure of components, their relationships and the principles and guidelines governing their design and evolution over time.

attribute - A quantitative or qualitative characteristic of an element or its actions.

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

capabilities-based assessment (CBA) – The CBA is the Joint Capabilities Integration and Development System analysis process that includes four phases: the functional area analysis, the functional needs analysis, the functional solution analysis and the post independent analysis. The results of the CBA are used to develop a joint capabilities document or initial capabilities document.

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.

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 production document - A document that addresses the production elements specific to a single increment of an acquisition program.

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

comment priorities -

a. critical - Indicates nonconcurrence in the document, for both the O-6 and flag review, until the comment is satisfactorily resolved.

b. substantive - Provided because a section in the document appears to be or is potentially unnecessary, incorrect, misleading, confusing or inconsistent with other sections.

c. administrative - Corrects what appears to be a typographical, format or grammatical error.

concept of operations - 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 concept of operations 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 commander's concept or CONOPS.

critical considerations - The seven domains of DOTMLPF: joint doctrine, agile organizations, joint training, enhanced materiel, innovative leadership and education, and high quality people plus the additional element of facilities and the policies that affect them.

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.

DOD 5000 Series - DOD 5000 series refers collectively to DODD 5000.1 and DODI 5000.2, references t and b, respectively.

electromagnetic environmental effects - The impact of the electromagnetic environment upon the operational capability of military forces, equipment, systems and platforms.

embedded instrumentation - Data collection and processing capabilities, integrated into the design of a system for one or more of the following uses: diagnostics, prognostics, testing or training.

environmental quality - The condition of the following elements that make up the environment: flora, fauna, air, water, land and cultural resources.

environmental, safety and occupational health (ESOH) – ESOH includes environmental quality, environmental health, fire protection, ground safety, flight safety, weapons (munitions, explosives, missile and nuclear) safety, space safety, occupational safety and occupational health.

evolutionary acquisition - Preferred DOD strategy for rapid acquisition of mature technology for the user. An evolutionary approach delivers capability in increments, recognizing up front the need for future capability improvements.

Family of Joint Future Concepts –Incorporates strategic guidance and enduring national interests through an overarching concept. The Joint Operations Concepts is written in order to provide overarching guidance to the joint concept community of how the future joint force should operate in 10-20 years. This guides the selection, writing and development of joint operating concepts, joint functional concepts and joint integrating concepts. These concepts together constitute the Family of Joint Future Concepts.

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.

functional area - A broad scope of related joint warfighting skills and attributes that may span the range of military operations. Specific skill groupings that make up the functional areas are approved by the Joint Requirements Oversight Council.

Functional Capabilities Board - A permanently established body that is responsible for the organization, analysis and prioritization of joint warfighting capabilities within an assigned functional area.

functional process owner (FPO) – Joint Staff directorates that have the responsibility for the joint doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF)-selected "joint processes," as shown in the table below.

Critical Consideration DOTMLPF FPO

Joint Doctrine	Joint Staff J-7
Joint Organizations	Joint Staff J-8 (with J-1 & J-5 support)

Joint Training	Joint Staff J-7
Joint Materiel	Joint Staff J-8
Joint Leadership and Education	Joint Staff J-7
Joint Personnel	Joint Staff J-1
Joint Facilities	Joint Staff J-4

human systems integration - Defined in reference b, includes the integrated and comprehensive analysis, design and assessment of requirements, concepts and resources for system manpower, personnel, training, safety and occupational health, habitability, personnel survivability and human factors engineering.

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 user. Spiral development is an instance of an incremental development strategy where the end state is not known. Technology is spiraled to maturity and injected into the delivery of an increment of capability.

information assurance - 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 Support Plan (ISP) - The ISP shall describe system dependencies and interface requirements in sufficient detail to enable testing and verification of information technology (IT) and National Security Systems (NSS) interoperability and supportability requirements. The ISP shall also include IT and NSS systems interface descriptions, infrastructure and support requirements, standards profiles, measures of performance and interoperability shortfalls.

information technology (IT) - Any equipment, or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data or information by the executive agency. This includes equipment used by a component directly, or used by a contractor under a contract with the component, which (i) requires the use of such equipment, or (ii) requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product. The

term "IT" also includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services) and related resources. Notwithstanding the above, the term "IT" does not include any equipment that is acquired by a federal contractor incidental to a federal contract. The term "IT" includes National Security Systems.

initial capabilities document (ICD) - Documents the need for a materiel approach or an approach that is a combination of materiel and non-materiel to satisfy a specific capability gap(s). It defines the capability gap(s) in terms of the functional area, the relevant range of military operations, desired effects, time, and doctrine, organization, training, materiel, leadership and education, personnel and facilities (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 capability development documents.

insensitive munitions - Munitions that minimize the probability of inadvertent initiation and the severity of subsequent collateral damage as a result of unplanned, external stimuli.

integrated architectures - An architecture consisting of multiple views or perspectives (operational view, systems view and technical standards view) that facilitates integration and promotes interoperability across capabilities and among related integrated architectures.

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. Information technology and National Security Systems interoperability includes both the technical exchange of information and the end-to-end operational effectiveness of that exchanged information as required for mission accomplishment.

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 Joint Capabilities Integration and Development System and doctrine, organization, training, materiel, leadership and education, personnel and facilities proposals prior to their submission to the JROC. The JCB is chaired by the Joint Staff Director of Force Structure, Resources and Assessment (J-8). It is comprised of general and flag officer representatives of the Services.

joint capabilities document (JCD) – The JCD identifies a set of capabilities that support a defined mission area as identified in the Family of Joint Future Concepts, concept of operations (CONOPS), or Unified Command Plan-assigned

missions. The capabilities are identified by analyzing what is required across all functional areas to accomplish the mission. The gaps or redundancies are then identified by comparing the capability needs to the capabilities provided by existing or planned systems. The JCD will be used as a baseline for one or more initial capabilities documents or joint doctrine, organization, training, materiel, leadership and education, personnel and facilities change recommendations, but cannot be used for the development of capability development or capability production documents. The JCD will be updated as changes are made to the Family of Joint Future Concepts, CONOPS or assigned missions.

joint doctrine, organization, training, materiel, leadership and education, personnel and facilities change recommendation – A recommendation for changes to existing joint resources when such changes are not associated with a new defense acquisition program.

a. joint doctrine – Fundamental principles that guide the employment of US military forces in coordinated action toward a common objective. Though neither policy nor strategy, joint doctrine serves to make US policy and strategy effective in the application of US military power. Joint doctrine is based on extant capabilities. Joint doctrine is authoritative guidance and will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. (CJCSI 5120.02)

b. joint organization - A [joint] unit or element with varied functions enabled by a structure through which individuals cooperate systematically to accomplish a common mission and directly provide or support [joint] warfighting capabilities. Subordinate units and elements coordinate with other units and elements and, as a whole, enable the higher-level [joint] unit or element to accomplish its mission. This includes the joint manpower (military, civilian and contractor support) required to operate, sustain and reconstitute joint warfighting capabilities.

c. joint training – Military training based on joint doctrine or joint tactics, techniques and procedures to prepare joint forces and/or joint staffs to respond to strategic and operational requirements deemed necessary by combatant commanders to execute their assigned missions. Joint training involves forces of two or more Military Departments interacting with a combatant commander or subordinate joint force commander; involves joint forces and/or joint staffs; and is conducted using joint doctrine or joint tactics, techniques and procedures. (CJCSM 3500.03A)

d. joint materiel – All items (including ships, tanks, self-propelled weapons, aircraft, etc., and related spares, repair parts and support equipment, but excluding real property, installations and utilities) necessary to equip, operate,

maintain and support [joint] military activities without distinction as to its application for administrative or combat purposes. (JP 1-02)

e. joint leadership and education – Professional development of the joint commander is the product of a learning continuum that comprises training, experience, education and self-improvement. The role of professional military education and joint professional military education is to provide the education needed to complement training, experience and self-improvement to produce the most professionally competent individual possible.

f. joint personnel – The personnel component primarily ensures that qualified personnel exist to support joint capabilities. This is accomplished through synchronized efforts of joint force commanders and Service components to optimize personnel support to the joint force to ensure success of ongoing peacetime, contingency and wartime operations.

g. joint facilities – Real property consisting of one or more of the following: a building, a structure, a utility system, pavement and underlying land. Key facilities are selected command installations and industrial facilities of primary importance to the support of military operations or military production programs. A key facilities list is prepared under the policy direction of the Joint Chiefs of Staff.

joint experimentation - An iterative process for developing and assessing concept-based hypotheses to identify and recommend the best value-added solutions for changes in doctrine, organization, training, materiel, leadership and education, personnel and facilities and policy required to achieve significant advances in future joint operational capabilities.

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 Operations Concepts (JOpsC) - The JOpsC is the overarching concept that guides the development of future joint force capabilities. It broadly describes how the joint force is expected to operate 10-20 years in the future in all domains across the range of military operations within a multilateral environment and in collaboration with interagency and multinational partners. The JOpsC describes the proposed end states derived from strategy as military problems and the key characteristics of the future joint force (reference u).

joint potential designator - A designation assigned by the Gatekeeper to specify Joint Capabilities Integration and Development System validation, approval and interoperability expectations.

a. "JROC [Joint Requirements Oversight Council] Interest" designation will apply to all acquisition category (ACAT) I/IA programs and ACAT II and below

programs where these capabilities have a significant impact on joint warfighting or have a potential impact across services. All joint doctrine, organization, training, materiel, leadership and education, personnel and facilities change recommendations will also be designated JROC Interest. This designation may also apply to intelligence capabilities that support DOD and national intelligence requirements. These documents will receive appropriate certifications 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., business oriented systems). These programs may be designated either Joint Integration or Independent.

b. "Joint Integration" designation will apply to ACAT II and below programs where the concepts and/or systems associated with the document do not significantly affect the joint force and an expanded review is not required, but staffing is required for applicable certifications (information technology and National Security Systems interoperability, intelligence and/or insensitive munitions). Once the required certification(s) are completed, the proposal may be reviewed by the Functional Capabilities Board (FCB). Joint Integration proposals are validated and approved by the sponsoring component.

c. "Independent" designation will apply to ACAT II and below programs where the concepts and/or systems associated with the document do not significantly affect the joint force, an expanded review is not required and no certifications are required. Once designated Independent, the FCB may review the proposal. These documents are returned to the sponsoring component for validation and approval.

Joint Requirements Oversight Council memorandum (JROCM) - Official JROC correspondence generally directed to an audience(s) external to the JROC. JROCMs are usually decisional in nature.

joint tasks - To ascertain joint capabilities that can immediately direct the near and mid-term objectives of the Future Years Defense Plan, joint tasks must be determined on an annual basis. The Joint Chiefs of Staff, in coordination with the Services and combatant commands, will prioritize a limited number of joint tasks, including capability prototypes, annually that are based on combatant commander input, experimentation and joint lessons learned. The joint tasks will be developed to meet the joint force objective of full spectrum dominance as informed by the Joint Operations Concept. The joint tasks will primarily focus on joint military operations at the operational and strategic level of war and crisis resolution as informed by the Family of Joint Future Concepts. The development of these joint tasks will determine the division of Service responsibilities and permit the distillation of quick-win joint capabilities. The resulting Service responsibilities and capabilities from these joint tasks will serve to inform programming decisions and the Joint Capabilities Integration and Development System process.

Joint Transformation Integration System (JTIS) - A Joint Staff-supported database focused on transformation decisions and information dissemination. The mission of the JTIS is to support CJCS decision making by providing a single point comprehensive database of related and linked initiatives associated with joint doctrine, organization, training, materiel, leadership and education, personnel and facilities implementation. Using the latest information technology, the JTIS will integrate diverse and rapidly changing transformation data and make it available to senior leadership in a unified and comprehensible manner. The leadership will use this information to assess and guide the transformation process.

key decision points - Major decision points that separate the phases of a DOD space program.

key interface profiles (KIPs) - KIPs provide a net-centric oriented approach for managing interoperability across the Global Information Grid (GIG) based on the configuration control of key interfaces. The KIP is the set of documentation produced as a result of interface analysis which: designates an interface as key; analyzes it to understand its architectural, interoperability, test and configuration management characteristics; and documents those characteristics in conjunction with solution sets for issues identified during the analysis. GIG KIPs provide a description of required operational functionality, systems functionality and technical specifications for the interface. The profile consists of refined operational and systems view products, interface control document and/or specifications, engineering management plan, configuration management plan, technical view (TV-1) with systems view-TV bridge and procedures for standards conformance and interoperability testing.

key performance parameters (KPP) - Those attributes or characteristics of a system that are considered critical or essential to the development of an effective military capability and those attributes that make a significant contribution to the key characteristics as defined in the Joint Operations Concept. KPPs are validated by the Joint Requirements Oversight Council (JROC) for JROC Interest documents, and by the DOD component for Joint Integration or Independent documents. Capability development and capability production document KPPs are included verbatim in the acquisition program baseline.

lead DOD component - The Service or agency that has been formally designated as lead for a joint program by the Milestone Decision Authority. The lead component is responsible for common documentation, periodic reporting and funding actions.

logistic support - Logistic support encompasses the logistic services, materiel and transportation required to support the continental US-based and worldwide-deployed forces.

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, 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.

measures of effectiveness - Measures designed to correspond to accomplishment of mission objectives and achievement of desired effects.

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 (USD(AT&L)) to approve entry of an acquisition program into the next phase. USD(AT&L) makes this designation for weapon systems programs. The Assistant Secretary of Defense (Networks and Information Integration) makes this designation for automated information system acquisition programs. The Under Secretary of the Air Force, acting as the DOD Space MDA, makes this designation for space programs.

Military Department - One of the departments within the Department of Defense created by the National Security Act of 1947, as amended.

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.

Mission Requirements Board (MRB) - The MRB manages the national requirements process that reviews, validates and approves national requirements for future intelligence capabilities and systems. It is the senior validation and approval authority for future intelligence requirements funded within the National Foreign Intelligence Program (NFIP), and provides advice and council on future requirements funded outside the NFIP.

National Security Systems - Telecommunications and information systems, operated by the Department of Defense -- the functions, operation or use of which involves (1) intelligence activities; (2) cryptologic activities related to national security; (3) the command and control of military forces; (4) equipment that is an integral part of a weapon or weapons systems; or (5) is critical to the direct fulfillment of military or intelligence missions. Subsection (5) in the

preceding sentence does not include procurement of automatic data processing equipment or services to be used for routine administrative and business applications (including payroll, finance, logistics and personnel management applications).

net centric - Relating to or representing the attributes of net-centricity. Net-centricity is a robust, globally interconnected network environment (including infrastructure, systems, processes and people) in which data is shared timely and seamlessly among users, applications and platforms. Net-centricity enables substantially improved military situational awareness and significantly shortened decision-making cycles.

net-ready key performance parameter (NR-KPP) - The NR-KPP assesses information needs, information timeliness, information assurance and net-enabled attributes required for information exchange and use. The NR-KPP consists of measurable and testable characteristics and/or performance metrics required for the timely, accurate and complete exchange and use of information to satisfy information needs for a given capability. The NR-KPP is comprised of the following elements: compliance with the Net-Centric Operations and Warfare Reference Model (reference v); compliance with applicable Global Information Grid key interface profiles; verification of compliance with DOD information assurance requirements; and supporting integrated architecture products required to assess information exchange and use for a given capability.

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 nondevelopmental items that may be purchased commercially, or by purchasing more systems from an existing materiel program.

objective value - 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.

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.

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, logistics supportability, natural environment effects and impacts, documentation and training requirements.

operational view (OV) - An architecture view that describes the joint capabilities that the user seeks and how to employ them. The OVs also identify the operational nodes, the critical information needed to support the piece of the process associated with the nodes and the organizational relationships.

operator - An operational command or agency that employs the acquired system for the benefit of users. Operators may also be users.

sponsor - The DOD component, principal staff assistant or domain owner responsible for all common documentation, periodic reporting and funding actions required to support the capabilities development and acquisition process for a specific capability proposal.

supportability - Supportability is a key component of system availability. It includes design, technical support data, and maintenance procedures to facilitate detection, isolation and timely repair and/or replacement of system anomalies. This includes factors such as diagnostics, prognostics, real time maintenance data collection and human systems integration considerations.

sustainability - The ability to maintain the necessary level and duration of operational activity to achieve military objectives. Sustainability is a function of providing for and maintaining those levels of ready forces, materiel and consumables necessary to support military effort.

sustainment - The provision of personnel, training, logistic and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or of the national objective.

synchronization - The process of coordinating the timing of the delivery of capabilities, often involving different initiatives, to ensure the evolutionary nature of these deliveries satisfies the capabilities needed at the specified time that they are needed. Synchronization is particularly critical when the method of achieving these capabilities involves a family of systems or system of systems approach.

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 will significantly degrade the performance or capabilities of the whole. The development of a SoS solution will involve trade space between the systems as well as within an individual system performance. An example of a SoS would be a combat aircraft. While the aircraft may be developed as a

single system, it could incorporate subsystems developed for other aircraft. For example, the radar from an existing aircraft may be incorporated into the aircraft being developed rather than developing a new radar. The system of systems in this case would be the airframe, engines, radar, avionics, etc. that make up the entire combat aircraft capability.

systems view - An architecture 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.

task - An action or activity (derived from an analysis of the mission and concept of operations) assigned to an individual or organization to provide a capability.

technical view - An architecture view that describes how to tie the systems together in engineering terms. It consists of standards that define and clarify the individual systems technology and integration requirements.

threshold value - A minimum acceptable operational value below which the utility of the system becomes questionable.

user - An operational command or agency that receives or will receive benefit from the acquired system. Combatant commanders and their Service component commands are the users. There may be more than one user for a system. Because the Service component commands are required to organize, equip and train forces for the combatant commanders, they are seen as users for systems. The Chiefs of the Services and heads of other DOD components are validation and approval authorities and are not viewed as users.

user representative - A command or agency that has been formally designated by proper authority to represent single or multiple users in the capabilities and acquisition process. The Services and the Service components of the combatant commanders are normally the user representatives. There should only be one user representative for a system.

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

validation authority - The individual within the DOD components charged with overall capability definition and validation of the threshold and objective values of key performance parameters. The Vice Chairman of the Joint Chiefs of Staff, in the role as the Chairman of the Joint Requirements Oversight Council (JROC), is the validation authority for all potential major defense acquisition programs. The validation authority for Joint Capabilities Integration and

Development System issues is dependent upon the joint potential designator of the program or initiative as specified below:

a. JROC Interest - The JROC is the validation authority.

b. Joint Integration - The sponsor is the validation authority.

c. Independent - The sponsor is the validation authority.