

MANUAL FOR THE OPERATION OF THE JOINT CAPABILITIES INTEGRATION
AND DEVELOPMENT SYSTEM

1. Purpose. This manual sets forth guidelines and procedures for operation of the Joint Capabilities Integration and Development System (JCIDS) regarding the analysis, development, and staffing of JCIDS documents in support of reference a. This Manual replaces the cancelled CJCSM 3170.01C.

2. Applicability. In accordance with references a and b, these procedures apply to the Joint Staff, Military Departments, Military Services, combatant commands, Defense agencies, the National Guard Bureau, Department of Defense (DOD) field activities and joint and combined activities. They also apply to other agencies preparing and submitting JCIDS documents in accordance with references a and b.

3. Summary. This Manual provides guidance on the conduct of JCIDS analyses, the development of key performance parameters (KPP), requirements oversight and management for information technology systems, the JCIDS staffing process, and the roles and responsibilities of organizations. It also contains procedures and instructions regarding the staffing and development of 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).

4. Summary of Major Changes:

a. Incorporates changes summarized in the following approved memoranda:

(1) Joint Requirements Oversight Council (JROC) Memorandum (JROCM) 261-06, Cost, Performance and Interdependency Chart Implementing Directive (reference c).

(2) JROCM 074-07, System Training as a Selective Key Performance Parameter Process Action Plan (reference d).

(3) JROCM 008-08, Leveraging Technology Evolution for Information Technology Systems (reference e).

(4) JROCM 130-08, Assignment of Joint Potential Designators and Coordination by Combatant Commands on Capabilities Documents (reference f).

b. The joint capabilities document has been eliminated and the functions incorporated into the ICD.

c. Implements JROC guidance on the scope and depth of analysis necessary to support the capabilities-based assessment (CBA).

5. Releasability. This manual is approved for public release; distribution is unlimited.

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ENCLOSURE A

CAPABILITIES-BASED ASSESSMENT PROCESS

1. Capabilities-Based Assessment (CBA) Overview. The CBA is the analytic basis of the JCIDS process. It identifies capability needs and gaps and recommends non-materiel or materiel approaches to address gaps. A CBA may be based on an approved Joint Concept; a concept of operations (CONOPS) endorsed by the JROC, a combatant command, Service, or defense agency; the results of a Senior Warfighters' Forum (SWarF); or an identified operational need. It becomes the basis for validating capability needs and results in the potential development and deployment of new or improved capabilities. Figure A-1 shows the general flow of JCIDS as initiated by the CBA and the relationship of the JCIDS process to the acquisition process.

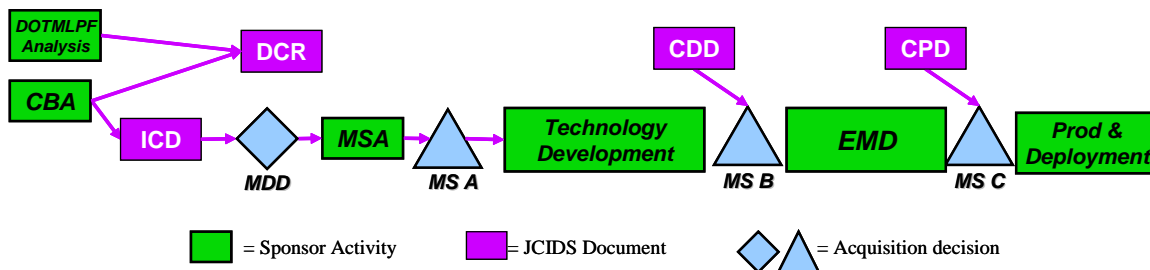


Figure A-1. Interrelationship of the JCIDS and Acquisition Processes

a. A CBA may be initiated by any DOD organization. The JROC preference is to avoid excessive rigor and time-consuming detail in the CBA, and concentrate on whether to recommend action. CBAs that are tightly focused on recapitalization or replacement actions should take no more than 90 days, while more complex CBAs dealing with large uncertainties should take no more than 180 days.

b. All CBAs are based on a framework of strategic guidance documents. The National Security Strategy (NSS), the National Strategy for Homeland Defense, the National Defense Strategy (NDS) and the National Military Strategy (NMS) provide the overarching description of the Nation's defense interests, objectives, and priorities. In addition, the Guidance for the Development of the Force, the Guidance for the Employment of the Force, and the most recent Quadrennial Defense Review Report contain further refinement of objectives and priorities, and help provide a framework for a CBA.

c. A CBA should use approved Joint Concepts (reference g), or CONOPS developed in conjunction with approved operation plans (OPLAN), concept plan (CONPLAN), or DOD Analytic Agenda scenarios (reference h). Exceptions are described in paragraph 2a(2) below.

- d. The major outputs of a CBA are:
- (1) a description of the mission and military problem being assessed;
 - (2) identification of the tasks to be completed to meet the mission objectives;
 - (3) identification of the capabilities required;
 - (4) an assessment of how well the current or programmed force meets the capability needs;
 - (5) an assessment of operational risks where capability gaps exist;
 - (6) recommendations for possible non-materiel solutions to the capability gaps; and
 - (7) recommendations for potential materiel approaches (if required).

e. CBAs emphasize problem identification and assessment of risk, because the fundamental decision is whether the DOD should take action to solve a problem. However, the CBA must also consider possible solutions to guide further action. In particular, the CBA must offer recommendations on whether the gaps can be addressed by non-materiel means, materiel means, or both. While a CBA should not provide extensive detail, it must give advice on the forms and functions of potential solutions. This broad advice passes to the Services/agencies and acquisition communities via DCRs and ICDs, and those communities develop and field specific solutions. While JCIDS does reenter the materiel solution process with the CDD and CPD, the initial assessment concentrates on general solution guidance. This philosophy defines the boundary between the JCIDS needs process and the solution development and fielding processes.

f. CBAs are also related to other major processes. In particular, joint experimentation may be used as input to a CBA; or, the results of a CBA may inform new experimentation efforts (reference g). A CBA or other DOTMLPF analysis may support the direct development of a DCR where a non-materiel solution can be implemented to mitigate part or all of a gap without relying on a materiel solution. Also, the results of the CBA support the development of ICDs. ICDs support the materiel development decision (MDD) and a subsequent materiel solution analysis (MSA) which will be an analysis of alternatives (AoA) for potential major defense acquisition programs (MDAP) and as directed by the component acquisition executive for non-MDAPs. The CBA should use the existing DOD Enterprise Architecture and related solution architectures as means of assessing the capability gaps and proposed approaches to mitigate them.

g. Due to the wide array of issues that can be considered through the CBA process, the breadth and depth of the analysis must be tailored to suit the issue. The analysis must be sufficient to develop coherent and well-supported DCRs and ICDs, which the validation authority will then use to validate the capabilities and capability gaps and to support possible follow-on actions.

2. CBA Process. Organizing and executing a successful JCIDS CBA is a significant challenge. Joint Concepts are specifically designed to drive progress in the DOD, and satisfying the demands of the strategic guidance poses significant challenges. Consequently, a CBA, particularly one aimed at a broad mission should be conducted with a capable joint team that can bring the necessary spectrum of expertise to bear on the problem. While this manual outlines the CBA process, other documents (such as references i, j, and k) offer much more advice in performing these assessments.

a. A CBA begins by identifying the mission or military problem to be assessed, the concepts to be examined, the timeframe in which the problem is being assessed, and the scope of the assessment. A CBA determines the relevant concepts, CONOPS, and objectives, and lists the related effects to be achieved. Since a capability is the ability to achieve an effect, capabilities provide the link between the defense strategy and the concepts, CONOPS, and objectives associated with a particular set of scenarios. A CBA may lead to policy development or support and validation of existing policies.

(1) The mission or military problem considered by the CBA must have operational context that is both relevant to the problem and the needs of the defense strategy. As a result, the CBA should use formally tasked OPLANs and Contingency Plans for near-term assessments or the Defense Planning Scenarios (DPS) published by the Office of the Secretary of Defense (OSD) under the DOD Analytic Agenda (reference h). Furthermore, the scenarios must be chosen in such a way that the full spectrum of operational situations relevant to the defense strategy will be examined. Documents such as the NDS, the NMS, and the Capstone Concept for Joint Operations (CCJO) provide several frameworks for describing the breadth of the strategic environment, and these documents should be used to select an adequate scenario sample. **The timeframe is important from two perspectives. First, it is necessary to help establish the conditions and threats under which the mission is to be carried out. Second, it will be a key component in discussions with the acquisition community in determining the required Initial Operational Capability (IOC) date.** While it is important to scope the assessment to make it manageable, it is equally important to cover the spectrum of strategically relevant operational situations.

(2) If some other CONOPS is used as the basis for a CBA, it must be first endorsed by the JROC, combatant command, or sponsoring DOD component. The CONOPS must be documented so that the reviewers and validation

authorities can understand the context used to identify and evaluate the capabilities identified. There is no strict format for a CONOPS, but it should describe the following areas at a minimum:

- (a) the problem being addressed;
- (b) the mission;
- (c) the commander's intent;
- (d) an operational overview;
- (e) the objectives to be achieved; and
- (f) the roles and responsibilities of tasked organizations.

(3) The military objectives of the scenarios, including mission outcomes and associated desired effect, provide a source for developing the list of required capabilities. These capabilities, coupled with the scenarios, should be further refined to describe how the objectives are achieved with current or programmed forces, using doctrinal approaches. This step will require a task representation; however, the task representation must also account for the proposed alternative concepts or CONOPS, so some flexibility is required. An alternative concept or CONOPS may be based on changing the original approved concept to mitigate the capability gap by using existing capabilities differently. The joint capability areas (JCA) (maintained at www.dtic.mil/futurejointwarfare) are currently the preferred method the Department of Defense uses for reviewing and managing capabilities. The JCA framework provides the structure around which capabilities and capability gaps can be aligned across the Department and across the various portfolios to correlate similar needs, leverage effective solutions, and synchronize related activities. Also, various frameworks, such as the Universal Joint Task List (UJTL) ([UJTL Portal](#)), are readily available to aid in identifying and organizing the tasks, conditions and required capabilities.

(4) The operational conditions are derived from scenarios, and capabilities are derived from tasks that must be accomplished to achieve the military objectives of those scenarios. The CBA produces a set of tasks and measures used to assess the programmed capabilities of the force. These measures should be based on applicable SWarF prioritized list of capability attributes for battlespace awareness, command and control, logistics, and net-centric capabilities (Appendix A). The CBA must also develop criteria for adequate mission performance. When available, the sponsor should use the SWarF identified metrics associated with the JCAs. Quantitative criteria for mission success should be established to support the assessment of the materiel reliability characteristics of potential materiel solutions. In most

cases, these criteria will not be simple pass-fail standards, but instead will represent a continuum of values.

(5) For capabilities provided by information systems, the CBA must use emerging guidance such as the DOD Information Management and Information Technology Strategic Plan 2008-2009, the DOD Net-Centric Data Strategy and other Community of Interest (COI) initiatives to describe and characterize system contributions to military operations. Information system evaluations represent a significant challenge due to the pace of change in the technology and the need to ensure wide-ranging interoperability, and the JROC recognizes the requirements process for such systems may be different from major warfighting platforms with multi-decade operational lives.

b. Threats to the mission being analyzed can be derived from DIA validated Capstone Threat Assessments (CTA), the Multi-Service Force Deployment (MSFD) and the Joint Country Forces Assessments. If additional assistance is required, contact DIA's Defense Warning Office, Acquisition Support Division for assistance:

- 1) DSN: 283-0788
- 2) SIPRNet: <http://www.dia/smil/mil/admin/di/dwo/dwo3.html>
- 3) JWICS: <http://www.dia.ic.gov/admin/di/dwo/dwo3.html>

c. The next step in a CBA is determining the level of analytic rigor needed to estimate operational sufficiency. Recent history indicates that CBAs suffer from too much detail and a lack of timeliness. The rigor associated with a CBA is a function of the uncertainties of the scenarios (futures) considered, the consequences of operational failure, the complexity of the mission being assessed. For example:

1) When performing a CBA relative to an existing capability that may require replacement/recapitalization, or evolution to meet future needs, the CBA is starting from a known baseline and making excursions to address potential future needs. In this case the CBA should take no more than 60-90 days to demonstrate that the replacement/recapitalization/evolution is required. The alternatives for the solution will be further considered in the AoA.

2) When performing a CBA that addresses capabilities most likely addressed through an information system type of solution, the CBA should take no more than 90 days. The determination on whether a new information system is required or an existing system can be evolved to meet the need will be determined by analysis subsequent to the CBA.

3) When performing a CBA that is looking at a new mission with a lot of uncertainty or complexity or is assessing the capabilities required for a new joint operating concept, the risks and uncertainty drive the need for a more comprehensive CBA. In this case the CBA should take no more than 180 days to provide the JROC with the information necessary to determine that it is necessary to move to an evolution of existing capability or to pursue transformational capabilities to meet the need.

4) One CBA may address any of these alternatives. In any case the maximum time allotted for the CBA should be no more than 180 days. The analysis should be tailored to meet this objective. The time allotted does not include the time required for staffing and approval. If the JROC requires more detail they will request it on an as needed basis.

d. The CBA sponsor must then perform the operational assessment of the current and programmed force to provide the required capabilities, identifying capability gaps and potential force redundancies for each scenario. Finally, the CBA assesses the potential operational risk associated with each gap.

(1) The gaps must be described in terms of the scenarios assessed and the impact on achieving the relevant military objectives. It is likely that the gaps will be inconsistent across scenarios, so it is essential to link the gaps to their operational context.

(2) The capability gaps are assessed in terms of the risk to mission (the ability to achieve the objectives of the scenario), the risk to force (the potential losses due to the capability gap), and other important considerations, such as resourcing risks and affects on allies. The conditions and standards developed for the associated tasks provide the basis for the assessments.

(3) Using the programmed force and doctrinal approaches, the capability gaps can be characterized as to whether they are due to:

(a) proficiency (ability to achieve the relevant effect in particular conditions);

(b) sufficiency (ability to achieve the effect but inability to bring the needed force to bear due to force shortages or other commitments);

(c) lack of existing capability;

(d) need for replacement due to aging of an existing capability; or

(e) policy limitations (inability to use the force as needed due to policy constraints).

(4) Since the validation authority will ultimately decide which gaps are pervasive or important enough to develop solutions, the gaps must be directly linked to operational situations and consequences of failing to meet objectives. The CBA must explain the methodology for determining the priorities of the gaps, and ensure that the linkage to strategic priorities is clear. While the CBA must present its conclusions concisely, it must also document the significant driving factors behind the recommended priorities to give the validation authority the information they need if they choose to make adjustments.

(5) Figure A-3 presents an example approach for assessing the risks and consequences associated with a particular capability gap. The capability gap is assessed based on its impact in several areas: ability to achieve the strategic objectives; operational timelines; resources; unanticipated requirements; force provider resourcing; and component functions, force management, institutional capacity.

e. A CBA then determines if a non-materiel (i.e., DOTmLPF) approach can mitigate any of the gaps. The common non-materiel approaches are:

(1) Alternative Doctrinal Approaches and Alternative CONOPS. Investigating alternative CONOPS is a JCIDS requirement. The baseline assessment should only consider doctrinal CONOPS, but the non-materiel approach assessment should consider doctrinal alternatives, particularly those documented in an approved joint concept.

(2) Policy Alternatives. When considering policy alternatives, the CBA must document which policies are contributing to capability gaps and under which circumstances. A policy change that allows new applications of existing capabilities or modifies force posture to increase deterrence is always of interest and should be considered. Policy alternatives requiring interagency or multinational cooperation must contain support for their feasibility, since the DOD cannot act unilaterally in these cases.

Criteria \ Risk	Low	Moderate	Significant	High
Strategic Objectives	Near certain achievement	Very likely achievement	Likely achievement	Significant risk of non-achievement
Operational Timelines	As planned	Minor extension	Significant delay	Delays with significant risk of non-achievement
Resources	As planned	Requires resources from other plans or operations	Requires resources that create significant shortfalls	Requires resources that preclude other plans or operations
Unanticipated Requirements	Easily managed, minimal impact	Managed via minor adjustments to other plans	Managed via significant adjustments to other plans	Cannot manage
Force Provider Resourcing	Full capacity to source requirements	Sourcing requires limited duration capability gaps	Sourcing requires extended duration capability gaps	Requires full mobilization to cover capability gaps
Institutional Capacity	Full capacity to source requirements	Requires shifts within DOD components to meet requirements	Requires shifts among DOD components to meet requirements	Requirements exceed capacity of the Joint force

Figure A-2. Example Approach for Assessing Risks.

(3) Organizational and personnel alternatives. A CBA cannot redesign the force, but it can suggest ways in which certain functions can be strengthened to eliminate gaps and point out mismatches between force availability and force needs. Finally, note that operating the programmed force under substantially different organizational or personnel assumptions will generally require the development of an alternative CONOPS to support those assumptions.

f. The final step in the CBA is to offer recommendations for materiel approaches. Materiel initiatives tend to fall into three broad types (listed in terms of fielding uncertainty from low to high):

(1) development and fielding of information systems (or similar technologies with high obsolescence rates) or evolution of the capabilities of existing information systems;

(2) evolution of existing systems with significant capability improvement (this may include replacing an existing system with a newer more capable system, or simple recapitalization); and

(3) breakout systems that differ significantly in form, function, operation, and capabilities from existing systems and offer significant improvement over current capabilities or transform how we accomplish the mission.

3. Processes that may substitute for a CBA. The DOD has several processes in place that can substitute for a formal CBA. They are listed below.

a. Joint Capability Technology Demonstration (JCTD). The military utility assessment (MUA), which is completed at the end of the JCTD, may be a suitable replacement for the required analysis used as the basis for ICD preparation. MUAs that do not contain the critical elements of information presented in the ICD (description of the capability gap(s); associated tasks, conditions and operational performance standards/metrics; and how the materiel and non-materiel approaches and analyses from the JCTD addressed these factors) will be augmented with a final demonstration report to qualify the results as equivalent to an ICD. The MUA/final demonstration report may be used to support the development and subsequent JROC approval of the CDD or CPD. A CDD or CPD, as appropriate, will be developed for the JCTD to transition into a program of record.

b. Prototypes. Results of advanced engineering concept prototype projects and operationally validated quick reaction technology projects intended for direct transition to fielded capabilities may also be eligible for consideration as joint solutions. This consideration shall be based on mission need validation and MUA processes as applied to JCTDs.

c. Joint Improvised Explosive Device (IED) Defeat Initiative Transition. The Joint IED Defeat Transition Packet, which is completed after the Joint IED Defeat Organization (JIEDDO) (reference l) validates an initiative, may be the appropriate replacement for the required analysis used as the basis for ICD preparation. The Transition Packet will be used as the CDD/CPD equivalent document for subsequent JROC approval and transition to a program of record.

d. Joint Urgent Operational Needs (JUON). Capabilities developed and field to support the resolution of a JUON (reference m) or through the Services' urgent needs processes, can be transitioned into the JCIDS process. An urgent need validated by the J-8 or the Service as appropriate, may be used to enter the JCIDS process without an ICD. The sponsor can enter the JCIDS and acquisition processes at MS B or C by initiating development of a CDD or CPD as appropriate. Capabilities fielded to resolve a JUON or Service urgent need which will continue to be required and sustained for the duration of the operation do not require additional JCIDS documentation.

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APPENDIX A TO ENCLOSURE A
JOINT CAPABILITY AREA ATTRIBUTES

1. The JROC directed the combatant commands to develop a prioritized list of capability attributes. The objective is to provide a common basis for definition of capabilities in the four enabling capability portfolios: battlespace awareness, command and control, logistics, and net-centric.

2. Battlespace Awareness Prioritized Attributes:

Intelligence, surveillance,
and reconnaissance

Comprehensive

Persistent

Survivable

Integrated

Timely

Credible

Adaptable

Innovative

Environment

Comprehensive

Timely

Integrated

Persistent

Credible

Survivable

Adaptable

Innovative

3. Command and Control Prioritized Attributes:

Interoperability
Understanding
Timeliness
Accessibility
Simplicity
Completeness
Agility
Accuracy
Relevance
Robustness
Operational Trust

4. Logistics Prioritized Attributes:

Deployment
And
Distribution

Visibility
Reliability
Velocity
Precision
Capacity

Supply

Responsiveness
Sustainability
Flexibility
Survivability
Attainability
Economy
Simplicity

Maintain

Sustainability
Responsiveness
Attainability
Flexibility
Economy
Survivability
Simplicity

Logistics
Services

Responsiveness
Attainability
Sustainability
Flexibility
Economy
Survivable
Simplicity

Operational
Contract
Support

Responsiveness
Attainability
Flexibility
Survivability
Sustainability
Simplicity
Economy

Engineering

Effective
Expeditionary
Agile/Tailorable
Networked
Integrated
Precise
Enduring/
Persistence

5. Net-centric Prioritized Attributes:

<u>Information Transport</u>	<u>Enterprise Services</u>	<u>Net Management</u>	<u>Information Assurance</u>
Accessible	Accessible	Accessible	Security
Capacity	Interoperable	Dynamic	Available
Accurate	Survivable	Flexible	Timely
Timely	Timely	Agile	Accurate
Throughput	Reliable	Integrated	Visible
Expeditionary	Accurate	Maintainable	Responsive
Latency	Relevant	Complete	Controllable
	Scalable	Reconfigurable	Complete
	Responsive		
	Robust		

ENCLOSURE B

PERFORMANCE ATTRIBUTES AND KEY PERFORMANCE PARAMETERS

1. Performance Attributes and Key Performance Parameters. The CDD and CPD state the system specific technical and sustainment-related performance attributes necessary to provide the operational capabilities required by the warfighter -- attributes so significant they must be verified by testing and evaluation or analysis. KPPs are those attributes or characteristics that are considered critical or essential to the development of an effective military capability that make a significant contribution to the characteristics of the future joint force. KPPs for capabilities in battlespace awareness, command and control, logistics and net-centric should be defined in terms of the SWarF prioritized attributes.

a. 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 joint operational environment intended for the system (family of systems (FoS) or system of systems (SoS)). There are compatibility and interoperability attributes (e.g., databases, fuel, transportability, ammunition) that might need to be identified for a capability to ensure its effectiveness. These statements will guide the acquisition community in making tradeoff decisions between the threshold and objective values of the stated attributes. Because testing and evaluation throughout a system's lifecycle will assess the ability of the system(s) to meet the production threshold values as defined by the KPPs, key system attributes (KSA), and other performance attributes, these attributes must be measurable and testable.

b. Each attribute will be supported by an operationally oriented analysis that takes into account technology maturity, fiscal constraints, and the timeframe the capability is required before determining threshold and objective values. Given these constraints, an evolutionary acquisition approach may be necessary, delivering the capability in achievable increments that allow management of the risks, ensuring delivery of the complete capability within the timeframe required. 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.

c. 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 or may not provide an improvement over current capabilities. 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 Operations Concepts (JOpsC) may result in changes to threshold and objective values in future increments.

d. The attributes and their supporting rationale should reflect analytical insights identified by the CBA used to develop an ICD. At 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 tradeoff analysis; the capability cost tradeoff analysis; the results of experimentation; testing and evaluation; sustainment, system training, and energy efficiency analysis; technology development; lessons learned during the engineering and manufacturing development (EMD) phase; life-cycle/total ownership cost analysis; and user feedback on fielded production increments (including operational suitability). The AoA and other supporting analyses provide the analytic foundation for determining the appropriate thresholds and objectives for the system attributes. The analysis also aids in determining which attributes should be KPPs or KSAs.

e. KPPs are those system attributes considered most critical or essential for an effective military capability. The CDD and the CPD must contain sufficient KPPs to capture the minimum operational effectiveness, suitability, and sustainment attributes needed to achieve the overall desired capabilities for the system (or systems if the CDD/CPD describes an 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. Appendix A to this Enclosure provides information on the types of performance attributes that are typically identified as KPPs for major systems. This information is provided as a guide in the process of identifying potential KPPs. The number of KPPs (beyond the required mandatory KPPs) should be kept to a minimum to maintain program flexibility.

f. KSAs are those system attributes considered critical or essential for an effective military capability but not selected as KPPs. KSAs provide decision makers with an additional level of capability prioritization below the KPP but with senior sponsor leadership control (generally 4-star level, Defense agency commander, or Principal Staff Assistant). In the case of the mandated Sustainment KPP, the supporting KSAs are inserted verbatim into the

acquisition program baseline (APB). Any changes to these KSAs will be documented in subsequent updates to the APB. The number of KSAs (beyond those supporting the Sustainment KPP) should be kept to a minimum to maintain program flexibility. KSAs do not apply to the net-ready KPP (NR-KPP).

2. Required KPPs

a. Mandatory KPPs for Force Protection and Survivability. All CDDs and CPDs for manned systems and systems designed to enhance personnel survivability will identify KPPs for force protection and survivability when those systems may be employed in an asymmetric threat environment (reference n). This applies to all pre-MS C programs. The Protection Functional Capabilities Board (FCB), in coordination with the lead FCB, will assess the proposed KPPs and their applicability for JROC/JCB Interest CDDs and CPDs and make a recommendation to the JROC/JCB on validation. The sponsoring component will validate the KPPs for non-JROC/JCB Interest CDDs and CPDs. A single KPP can be developed to cover force protection and survivability provided it complies with the congressional direction.

(1) Survivability KPP. Survivability attributes are those that contribute to the survivability of a manned system. This includes attributes such as speed, maneuverability, detectability, and countermeasures that reduce a system's likelihood of being engaged by hostile fire, as well as attributes such as armor and redundancy of critical components that reduce the system's vulnerability if it is hit by hostile fire.

(2) Force Protection KPP. Force protection attributes are those that contribute to the protection of personnel by preventing or mitigating hostile actions against friendly personnel, military and civilian. This may include the same attributes as those that contribute to survivability, but the emphasis is on protecting the system operator or other personnel rather than protecting the system itself. Attributes that are offensive in nature and primarily intended to defeat enemy forces before they can engage friendly forces are not considered force protection attributes. Attributes that protect against accidents, weather, natural environmental hazards, or disease (except when related to a biological attack) are also not part of force protection.

(3) Exemptions. Document sponsors who determine that the survivability and/or force protection KPPs do not apply will include rationale in the CDD/CPD explaining why they are not appropriate. The JROC must concur in this recommendation for JROC Interest documents.

b. Sustainment KPP. Sustainment consists of three key factors: Availability, Reliability, and Ownership Cost. The Sustainment KPP (Availability) and two mandatory supporting KSAs (Reliability and Ownership Cost) will be developed for all ACAT 1 programs. For ACAT II and below

programs, the sponsor will determine the applicability of the KPP. During the CBA, the relevant sustainment criteria and alternatives will be evaluated to provide the analytical foundation for the establishment of the sustainment KPP and KSAs.

(1) Additional guidance on the sustainment KPP is provided in Appendix B to this Enclosure and reference o.

(2) Exemptions. For ACAT II and below programs, the sponsor who determines the Sustainment KPP does not apply will include rationale in the CDD/CPD explaining why it is not appropriate. For a designated KPP to be considered as such within a CPD for a system at MS C, it must first have been required in the CDD at MS B. The sponsor must still identify the associated production sustainment metrics in the CPD for the system based on expected performance of the system whether the KPP existed in the CDD or not.

c. Net-Ready KPP (NR-KPP). A NR-KPP will be developed for all information technology (IT) and national security systems (NSS) used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, or transmission or reception of DOD data or information regardless of classification or sensitivity. This includes telecommunications or information systems operated by the U. S. Government, the function, operation, or use of which involves: intelligence activities; cryptologic activities related national security; command and control of military forces; equipment that is an integral part of a system; and is critical to the direct fulfillment of military or intelligence missions. Exceptions are those systems that do not communicate with external ones, including IT systems in accordance with references p, q, and r.

(1) Interoperability of IT and NSS is defined in reference p 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. Interoperability of IT and NSS includes the technical exchange of information and the end-to-end operational effectiveness of that exchange as required for mission accomplishment. An NR-KPP is based on the information exchange of the proposed system(s) and is derived from the DOD Enterprise Architecture and solution architectures, whenever possible, as defined in references p and s.

(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 t) 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) (reference u). The NR-KPP should consider how systems will train in peacetime individually or as a federation of systems. The NR-KPP should also consider bandwidth, radio spectrum regulations, and allocation in a peacetime environment. 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 q and r) 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 which connects to a GIG asset in accordance with reference r. 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.

(4) Document sponsors who determine the NR-KPP does not apply will include rationale in the CDD/CPD explaining why it is not appropriate. Joint Staff/J-6 must concur in this determination.

d. Selectively Applied KPPs. The JROC has defined two KPPs to be selectively applied to programs: system training and energy efficiency. The sponsor will perform an analysis on the use of these parameters as KPPs. If the analysis determines that they should not be KPPs, a summary of the justification will be provided in the CDD.

(1) System Training KPP. Training should be considered early in the capabilities development process beginning with the analyses that support development of the ICD and continues with development of the CDD. Ensure system training is addressed in the AoA and supporting analysis for subsequent acquisition phases and ensure projected training requirements and associated costs are appropriately addressed across the program life cycle. Embedded training and net-centric enabled training shall be considered the first alternative for cost effective delivery of instruction. The training capability requirements should be on par with operational systems capability. Further guidance on this KPP can be found in Appendix C to this Enclosure.

(2) Energy Efficiency KPP. Include fuel efficiency considerations in systems consistent with future force plans and approved planning scenarios. Include operational fuel demand and related fuel logistics resupply risk considerations with the focus on mission success and mitigating the size of the fuel logistics force within the given planning scenarios. These assessments will inform the setting of targets and thresholds for the fuel efficiency of materiel solutions. Consider fuel risk in irregular warfare scenarios, operations in austere or concealed settings, and other asymmetric environments, as well as conventional campaigns.

e. KPP Traceability. All systems will have KPPs that can be traced back to the capability definitions in the ICD and to the joint functions defined in the Joint Publication 3-0 (reference v) to which the proposed system makes a significant contribution. These attributes may be designated as KPPs and have threshold and objective values defining the system's contribution to the capability. Guidelines for identifying the KPPs are:

(1) Based on the primary mission of the system, does it contribute to one or more of the capabilities defined in the ICD or the joint functions?

(2) Does the system have other attributes that contribute significantly to the capabilities in the ICD or the joint functions?

(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 capability. It is not necessary to designate as a KPP every attribute associated with a particular capability, only those most essential to the capability.

3. Development of KPPs. The sponsor designates appropriate attributes as KPPs and KSAs. For JROC Interest and Joint Capabilities Board (JCB) Interest documents, the JCB/JROC may designate additional attributes as KPPs or KSAs on the recommendation of the FCBs.

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

(1) Is the attribute a necessary component of the mandatory KPPs (statutory, sustainment, or net-ready) or is it essential for providing 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 reflective of fiscal constraints, applicable technology maturity, timeframe the capability is required, and supported by analysis?

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

(7) Did the analysis determine the need for the system training KPP. If not, did the analysis provide quantifiable justification for not having system training as a KPP?

(8) Did the life-cycle and operational need analysis determine the applicability of the energy efficiency KPP? In making this determination, were operational fuel resupply risks in irregular and conventional operations examined? If neither is a key performance parameter, ensure the analysis is available for review.

b. A KPP will normally be a rollup of a number of supporting attributes or KSAs 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 that the system described in the CDD/CPD is projected to meet, including those related to other systems in an 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: Review for applicability the list of attributes associated with each of the joint functions in Appendix A to this Enclosure. Compile a list of potential attributes using Appendix A as a starting point and include any other performance attributes that are essential to the delivery of the capability. Cross walk this list with the capabilities in Step 2 to assist in identifying potential performance attributes to be considered for designation as KPPs.

(4) Step 4: For each mission or function, build at least one measurable performance attribute using the list from Step 3 as a starting point.

(5) Step 5: 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.)

(6) Step 6: Document how the KPPs are responsive to the capability performance attributes identified in the ICDs in support of the mission outcomes and associated desired effects.

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 EMD. 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 EMD, 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. A deeper review of trade-offs at and around threshold values may be beneficial to explore incremental return on investment where particular thresholds are insensitive to small deviation at great advantage in cost, performance, and schedule reviews. After the critical design 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 EMD, 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).

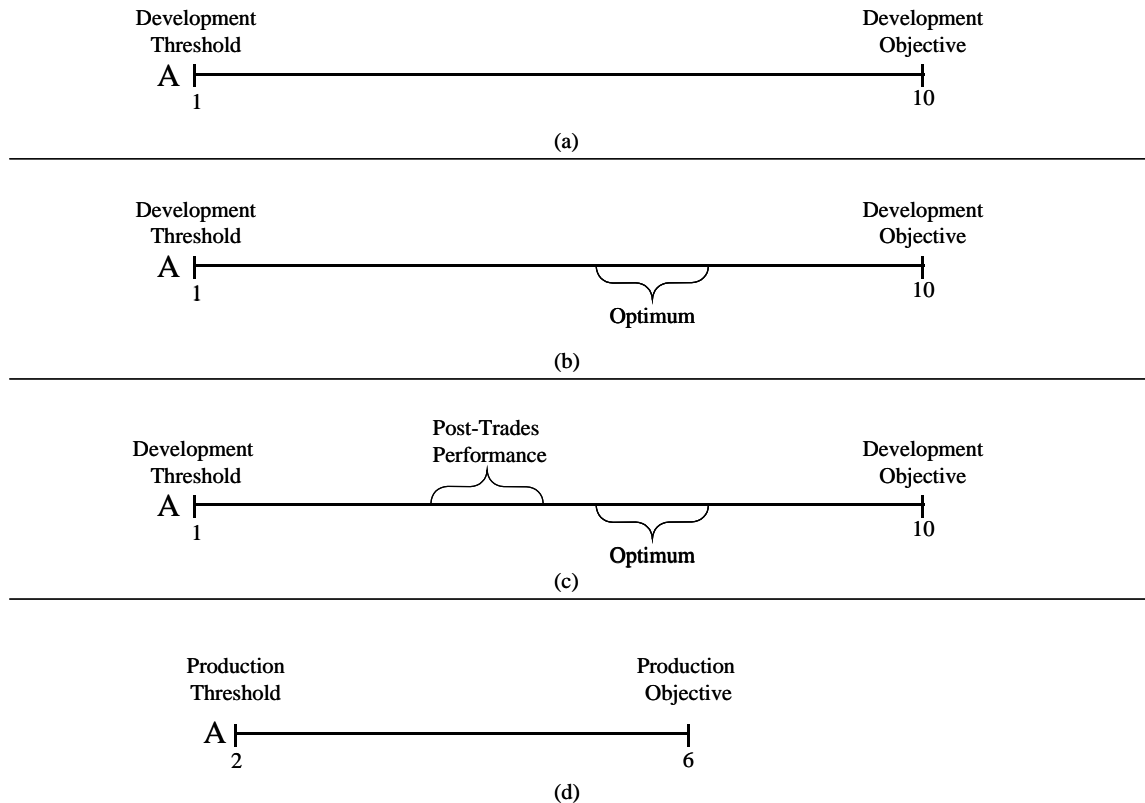


Figure B-1 (a), (b), (c), and (d). CDD and CPD Attributes

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

4. Changing KPPs. There may be circumstances where it is necessary to change the previously approved KPPs. These include cost, technology, production, development, or other issues that prevent meeting the threshold of the KPP. For KPPs in JROC Interest and JCB Interest documents, where the change is not substantive in terms of the delivered capability, a streamlined process has been developed for rapid approval. For all other documents, the sponsor maintains control of the KPPs. The sponsor may request to bypass the JCIDS staffing and proceed directly to the JROC/JCB for validation of the change. The process is as follows:

a. The sponsor will submit the document to the Knowledge Management/ Decision Support (KM/DS) tool as an FCB draft document, and identify in the “purpose” section that this is a KPP update only and request direct consideration by the FCB without staffing.

b. The Lead FCB and the Joint Staff/J-8 Capabilities and Acquisition Division (CAD) action officer will evaluate the change and determine if staffing is required.

c. If additional staffing is required, the change will go through the normal coordination process.

d. If the update is to the NR-KPP only, the document will be staffed to Joint Staff/J-6 for recertification via KM/DS.

e. If additional staffing is not required, the lead FCB will work with the sponsor to prepare a briefing for the JROC/JCB to obtain approval.

f. The lead FCB will schedule the briefing on the JCB and JROC calendars as required.

APPENDIX A TO ENCLOSURE B

ATTRIBUTES FOR POTENTIAL KEY PERFORMANCE PARAMETER DESIGNATION

1. The following information is provided to assist in identifying potential performance attributes for a system based on the joint functions defined in Joint Publication 3-0 (reference v). The performance attributes should be tied back to the capability attributes identified in the relevant ICDs. For each characteristic, a definition is provided as well as a list of potential performance attributes. The list of potential KPP attributes represent an iterative consolidation of more than 400 KPPs historically used across the ACAT I programs, and serves as a useful aid in quickly generating potential KPP options. These should be used as part of the process delineated in Enclosure B.

a. Command and Control – C2 encompasses the exercise of authority and direction by a commander over assigned and attached forces in the accomplishment of the mission.

- (1) Contact – detect/discriminate/classify type/identify friendly
- (2) Information -- ability to create, store, modify, or reconfigure
- (3) Accurate engagement decision/engagement sequence
- (4) Automated mission planning
- (5) Initial report accuracy
- (6) Speed of initial report
- (7) Communication throughput while mobile/non-mobile
- (8) Interoperable/net ready
- (9) Networked with specific sensors/units
- (10) Waveform compatibility
- (11) Works with legacy systems
- (12) Internal growth

- (13) Types of broadcast supported/scalability
- (14) Data -- transfer-distribution rate/update rate
- (15) Multi-channel routing/retransmission/operation on the same net
- (16) Data variable rate capability

b. Intelligence – Intelligence provides understanding of the operational environment.

- (1) Coverage/focus areas
- (2) Onboard platform range of surveillance systems/sensors/communications
- (3) Sensor collection performance parameters
- (4) Tracking -- number/altitudes/depths/velocities
- (5) Meteorology and Oceanography including Space Weather and Astrogeophysics
 - (a) Atmospheric vertical moisture profile
 - (b) Global sea surface winds
 - (c) Atmospheric vertical temperature profile
 - (d) Imagery
 - (e) Sea surface temperature horizontal resolution
 - (f) Soil moisture (surface) sensing depth
 - (g) Sea state (wave height, currents, storm effects)
 - (h) Bathymetry, sea mounts, other navigational hazards

c. Fires – To use available systems to create a specific lethal or nonlethal effect on a target.

- (1) Weapon -- launch envelope/weight/number on launchers
- (2) Platform -- systems/launchers/firing-storing capacity
- (3) Weapon -- off axis launch angle, off bore sight angle, all weather, day-night

- (4) Intercept/circular error probable
- (5) Acceptable engagement sequence time
- (6) Mission response time
- (7) Power-up/fire/re-fire/weapon launch rate
- (8) Sortie rate -- generated/sustained/surge
- (9) Weapon in-flight re-targeting
- (10) Detect to engage scenarios
- (11) Expected fractional damage
- (12) Probability of kill/mission kill
- (13) Weapon range

d. Movement and Maneuver – Disposing joint forces to conduct campaigns, major operations, and other contingencies by securing positional advantages before combat operations commence and by exploiting tactical success to achieve operational and strategic objectives.

- (1) Air vehicles -- land-takeoff distance/ship launch-recover parameters/deck spot factor
- (2) Air vehicle -- climb rate-gradient/G-load capability
- (3) Air vehicles -- vertical-short take-off and landing/aerial refueling/classes of airspace/altitude (max-min-on station-intercept)
- (4) Water vehicles -- land-launch spots/compatibility with other water vehicles
- (5) Ground vehicle -- fording
- (6) Platform range -- maximum/minimum/combat-mission radius
- (7) Water vehicles -- draft/weight/stability/electrical generating capacity/test depth/sea state limitations
- (8) Compatible on aircraft/aircraft carriers/ships
- (9) Physically interoperable with other platforms/systems/subsystems/warheads/launchers

(10) Platform speed -- maximum/minimum/cruise/flank/sustained/acceleration/land-sea-air

(11) Weight/volume to fit expected carrying platforms

(12) Ability to transport aircraft/vehicles/cargo/fuel/passengers/troops/crew

(13) Lift capacity

(14) Platform transportability

(15) Self-deployment capability

(16) Cargo transfer rate

(17) Platform specified timelines

e. Protection – Conserving the joint force’s fighting potential through active defensive measures, passive defensive measures, applying technology and procedures, and emergency management and response.

(1) Coded message error probability

(2) Frequency range

(3) Transmitted data accuracy

(4) Access and control

(5) Threat challenges -- countermeasures/radar cross section-size/multiple numbers

(6) Ability to withstand hit/blast/flood/shock/chemical biological radiological and nuclear effects

(7) Assured communications to national, missile defense, and nuclear forces

(8) Covertiness -- radiated noise/active target strength/radar cross section/electro magnetic quieting/radio frequency signature

(9) Information assurance – ability to protect, detect, analyze, and respond to adversarial attempts to use our operational information and/or our operational systems against us

(10) Jam resistance – ability to resist or deny adversarial attempts to disrupt or disable our systems within operations

- (11) Tactics, techniques, and procedures/countermeasures
- (12) Jamming capability

f. Sustainment – The provision of logistics and personnel services necessary to maintain availability of materiel and support operations until mission accomplishment.

- (1) Training
- (2) Logistics footprint
- (3) Operational availability (down-time versus up-time)
- (4) Sustained operations
- (5) Time
- (6) Various reliability measures

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APPENDIX B TO ENCLOSURE B
GUIDE FOR THE SUSTAINMENT KPP

1. Introduction. Sustainment is a key component of performance. Including sustainment planning “upfront” enables the acquisition and requirements communities to provide a system with optimal availability and reliability to the warfighter at best value.

The value of the Sustainment KPP is derived from the operational requirements of the system, assumptions for its operational use, and the planned logistical support to sustain it. In order for the program manager to develop a complete system to provide warfighting capability, sustainment objectives must be established and performance of the entire system measured against those metrics.

This Appendix provides requirements managers, with support from the acquisition community, a guide to assist them in ensuring that effective sustainment is addressed and achieved. This is done through compliance with the Sustainment metrics as identified in the systems capabilities documents. Considering sustainment upfront enables the acquisition and requirements communities to provide a system with optimal availability and reliability for the Joint Warfighter. This guide will not attempt to prescribe what will be provided to support Sustainment requirements. It will provide factors which should be considered when determining if the rationale being provided meets the rigor needed for programs requiring a Sustainment metric review. Methods are not directed, but must withstand critical review and must provide sufficient supporting documentation detail to validate methods. The RAM-C Manual (reference o) will assist sponsors and program managers on developing the relevant operationally based sustainment characteristic.

2. Applicability. Development of the Sustainment metrics is required for all ACAT I programs involving materiel solutions and ACAT II and below programs as determined by the sponsor.

a. Pre-Milestone B Applicability – All ACAT I programs must meet the requirements of the mandatory KPP for Availability, and KSAs for Reliability and Ownership Cost.

b. Post-Milestone B Applicability – For a designated KPP to be considered as such within a CPD for a system at MS C, it must first have been required in the CDD at MS B. Though a Sustainment KPP is not mandatory for post-milestone B programs if the KPP was not present in the CDD, the sponsor must identify the associated sustainment metrics for the system based upon the expected performance of the system that will go into production in the CPD.

3. Background. The tenets of Life Cycle Management emphasize an early focus on sustainment within the system life cycle. Life Cycle Management is the implementation, management, and oversight, by the designated Program Manager (PM), of all activities associated with the acquisition, development, production, fielding, sustainment, and disposal of a DOD system across its life cycle. It empowers the PM as the life cycle manager with full accountability and responsibility for system acquisition and follow-on sustainment. Life Cycle Management concepts are now policy and have been initiated to provide more effective, affordable, operationally-ready systems through increased reliability, supportability, and maintainability. The PM is also responsible for ensuring, throughout the system life cycle, that the sustainment strategy is both regularly assessed and in full compliance with applicable statutory requirements in Title 10, United States Code. This guide emphasizes those sustainment analyses, activities, and documents within these phases necessary to ensure the design, development, testing, production, and fielding of reliable, affordable, and maintainable systems. The criteria, information, and activities listed are not inclusive – that is, they cannot necessarily be applied to all systems. Each program must determine whether and how each item is applicable to their specific concept, technology, and/or system.

4. Overview of Sustainment KPP Process.

a. The value of the sustainment KPP is derived from the operational requirements of the system, assumptions for its operational use, and the planned logistical support to sustain it. In order for the program manager to develop a complete system to provide warfighting capability, sustainment objectives must be established and performance of the entire system measured against those metrics. The operational framework for the expected materiel availability must be clearly articulated up-front during the CBA process. For example, if a combatant commander had a requirement for a new medium lift transport vehicle, knowledge of the range of missions and required duration; constraints on loading and capacities; knowledge of operating environments and other related mission criteria are essential to ensure developers consider the variables that affect availability.

b. During the CBA, the operational framework and the priorities of the combatant commanders should be defined sufficiently to guide the development of alternative materiel solutions (hardware/software systems) and alternative sustainment solutions during subsequent analysis. Assessment of capability and performance must consider both the system and its sustaining support at the same time.

c. There are three factors which are used to fully define system Sustainment.

(1) Availability KPP. Availability will consist of two components: Materiel Availability and Operational Availability. The components provide availability percentages from a corporate, fleet-wide perspective and an operational unit level, respectively. The Operational Availability metric is an integral step to determining the fleet readiness metric expressed by Materiel Availability. The following provides guidance for development of both metrics:

(a) Materiel Availability. Materiel Availability is a measure of the percentage of the total inventory of a system operationally capable (ready for tasking) of performing an assigned mission at a given time, based on materiel condition. This can be expressed mathematically as number of operational end items/total population. The Materiel Availability addresses the total population of end items planned for operational use, including those temporarily in a non-operational status once placed into service (such as for depot-level maintenance). The total life-cycle timeframe, from placement into operational service through the planned end of service life, must be included. This is often referred to as equipment readiness. Development of the Materiel Availability metric is a program manager responsibility.

(b) Operational Availability. Operational Availability indicates the percentage of time that a system or group of systems within a unit are operationally capable of performing an assigned mission and can be expressed as (uptime/(uptime + downtime)). Determining the optimum value for Operational Availability requires a comprehensive analysis of the system and its planned use as identified in the CONOPS, including the planned operating environment, operating tempo, reliability alternatives, maintenance approaches, and supply chain solutions. Development of the Operational Availability metric is a requirements manager responsibility.

(2) Reliability KSA. Reliability is a measure of the probability that the system will perform without failure over a specific interval. Reliability must be sufficient to support the warfighting capability needed. Considerations of reliability must support both Availability metrics. Reliability may initially be expressed as a desired failure-free interval that can be converted to a failure frequency for use as a requirement (e.g., 95 percent probability of completing a 12-hour mission free from mission-degrading failure; 90 percent probability of completing 5 sorties without failure). Specific criteria for defining operating hours and failure criteria must be provided together with the Reliability. Single-shot systems and systems for which other units of measure are appropriate must provide supporting analysis and rationale. Development of the Reliability metric is a requirements manager responsibility.

(3) Ownership Cost KSA. Ownership Cost provides balance to the sustainment solution by ensuring that the operations and support (O&S) costs associated with Availability are considered in making decisions. For consistency and to capitalize on existing efforts in this area, the Cost Analysis Improvement Group

O&S Cost Estimating Structure will be used in support of this KSA (http://dcarc.pae.osd.mil/reference/osd_ces/index.aspx). As a minimum the following cost elements are required: 2.0 Unit Operations (2.1.1 (only) Energy (fuel, petroleum, oil, lubricants, electricity)); 3.0 Maintenance (All); 4.0 Sustaining Support (All except 4.1, System Specific Training); 5.0 Continuing System Improvements (All). Fuel costs will be based on the fully burdened cost of fuel. Costs are to be included regardless of funding source. The O&S value should cover the planned lifecycle timeframe, consistent with the timeframe used in the Materiel Availability metric. Sources of reference data, cost models, parametric cost estimating relationships, and other estimating techniques or tools must be identified in supporting analysis. Programs must plan for maintaining the traceability of costs incurred to estimates and must plan for testing and evaluation. The planned approach to monitoring, collecting, and validating operating and support cost data to supporting the O&S must be provided. Development of the Ownership Cost metric is a program manager responsibility.

d. The Sustainment KPP Review Proponent is the Maintenance Division (MXD), Joint Staff Logistics Directorate J4. J4-MXD will receive analytical support from the Office of the Assistant Deputy Under Secretary of Defense for Materiel Readiness (ADUSD (MR)) and Deputy Under Secretary of Defense for Acquisition and Technology (DUSD(A&T)) Systems and Software Engineering Directorate.

e. Process.

(1) J4-MXD receives notification of ACAT I Program CDDs and CPDs in KM/DS for Phase 1 and Phase 2 staffing.

(2) J4-MXD reviews and provides the CDDs and CPDs to ADUSD MR&MP for analysis.

(3) ADUSD (MR) analysts provide comments, including any unresolved critical comments, to J4-MXD.

(a) If the program document meets requirements, J4-MXD will enter comments into KM/DS providing J4 coordination.

(b) If critical comments are warranted, J4-MXD will first attempt to resolve with the sponsor. If still unresolved, J4-MXD will enter comments into KM/DS and brief VJ4 for final recommendation to the FCB.

(4) J4-MXD/ADUSD (MR) will only provide representation to FCBs, JCB and JROC for unresolved critical comments.

5. Review Criteria.

a. Requests for exceptions.

(1) Recommendation for deviation from the specified criteria as established in Enclosure B will only be supported in cases where the definitions as written do not apply or can be shown to be technically unsuitable. Differences in Service preferences, current practices or existing data systems are not sufficient grounds to support requests for exemptions.

(2) Unless the program explicitly requests exception, the document will be reviewed against the requirements in Enclosure B and amplified below for compliance.

(3) Complete exemption from the Sustainment KPP is not anticipated, and approval of an exemption would require evidence that there are no alternative means of crafting or tailoring a sustainment metric.

b. Availability.

(1) Materiel Availability:

(a) Is there evidence of a comprehensive analysis of the system and its planned use, including the planned operating environment, operating tempo, reliability alternatives, maintenance approaches, and supply chain solutions leading to the determination of the KPP value? Are the assumptions made in this analysis documented?

(b) Does the program account for the total population of end items being acquired for operational use?

(c) Are specific definitions provided for failures, mission-critical systems, criteria for counting assets as “up” or “down”?

(d) Does the metric clearly define and account for the intended service life, from initial placement into service through the planned removal from service? (A graphic representation (timeline) of the life-cycle profile is an effective way to present the data.)

(e) What is the overall sustainment CONOPS? Is it consistent with other CONOPS, design reference missions, scenarios, etc. being used? Is it traceable to the ICD, CDD, other JCIDS analysis, or agreement with the warfighting community? What alternatives were considered? Have surge/deployment acceleration requirements been identified?

(f) Is planned downtime (all causes) identified and included? Does the analysis package support the downtime? Are sources of data cited? How does the downtime value compare with that experienced by analogous systems?

(g) Is downtime caused by failure addressed? Are the values used for failure rates supported by the analysis? Is there a specific definition established for failure?

(h) Are sources of data identified? What models are being used to establish and track the KPP?

(2) Operational Availability:

(a) Is there evidence of a comprehensive analysis of the system and its planned use, including the planned operating environment, operating tempo, reliability alternatives, maintenance approaches, and supply chain solutions leading to the determination of the value? Are the assumptions made in this analysis documented? Has a CONOPS been developed for the system?

(b) Are specific definitions provided for failures, mission-critical systems, criteria for counting assets as “up” or “down”?

(c) Is scheduled downtime which affects the combatant commander identified and included? Does the analysis package support the downtime? Are sources of data cited? How does the downtime value compare with that experienced by analogous systems?

(d) Is downtime caused by failure addressed? Are the values used for failure rates supported by the analysis? Is there a specific definition established for failure?

(e) Is the Administrative and Logistics Downtime associated with failures addressed (recovery time, diagnostics time, movement of maintenance teams to the work site, etc.)?

c. Reliability.

(1) Has the reliability metric been established at the system level? Is it traceable to the ICD, CDD, other JCIDS analysis, or other performance agreement?

(2) Does the analysis clearly provide criteria for defining relevant failure?

(3) Does the analysis clearly define how time intervals will be measured?

(4) Does the analysis identify sources of baseline reliability data and any models being used? Is the proposed value consistent with comparable systems?

(5) Is the proposed reliability value consistent with the intended operational use of the system (i.e., the CONOPs)?

(6) Is the proposed reliability value consistent with the sustainment approach as presented in the operational availability metric?

(7) Is the proposed reliability value consistent with the performance of existing or analogous systems?

(8) For single-shot systems and systems for which units of measure other than time are used as the basis for measuring reliability, does the package clearly define the units, method of measuring or counting, and the associated rationale?

d. Ownership Cost.

(1) Has the Ownership Cost goal been defined in accordance with the minimum standards?

(2) Does the analysis clearly identify the cost structure to be used? (Specifically, which Cost Analysis Improvement Group (CAIG) O&S numbering structure?)

(3) Are sources of baseline cost data, cost estimating relationships, and cost models identified?

(4) Is the cost model consistent with the assumptions and conditions being used for materiel availability and materiel reliability?

(5) Is the cost metric traceable to the ICD, CDD, other JCIDS analysis, or agreement with the warfighter?

(6) Are all required costs included, regardless of funding source?

(7) Is the Ownership cost metric consistent with the program life cycle cost estimate (PLCCE) or CAIG estimate? (If available for comparison)

(8) Does the analysis include an approach to monitoring, collecting, and validating O&S cost data?

(9) If the Energy Efficiency KPP is being applied to the program, are the same sets of scenarios and duty cycles being used for gauging fuel logistics risk in that KPP as are being used for estimating the "Fully Burdened Cost of Fuel" as part of the Ownership Cost KSA? If not, provide an explanation.

6. For questions regarding the review process please contact J4-MXD at 703-614-0161. For questions regarding reference data packaging requirements and review criteria, please contact ADUSD (MR) 703-604-1075.

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APPENDIX C TO ENCLOSURE B

SYSTEM TRAINING KEY PERFORMANCE PARAMETER

1. The following applies to all JROC Interest/JCB Interest capability proposals:

a. Determine if System Training (ST) KPP is applicable with Force Support Functional Capabilities Board support using the question set below.

b. If applicable, complete the following actions:

(1) Ensure system training and training support is addressed in AoA analysis and subsequent phases.

(2) Ensure projected training requirements and associated costs are appropriately addressed across the program life cycle.

(3) Use ST KPP question set below as a framework to assist in KPP analysis.

(4) Sponsors shall include results of ST KPP analysis in their capabilities document submission along with an overall recommendation to the JCB/JROC on ST KPP applicability.

2. System Training (ST) KPP Question Set:

a. Is the system intended for Joint, multi-Service, reserve component, interagency, or coalition use?

b. Is the service life projected to be greater than five years, or extend beyond the initial warranty period, if applicable?

c. Is the program a designated acquisition special interest?

d. Is successful application of the system critically dependent on a rigorous training process early-on to maximize system capability with first unit equipped (FUE)?

e. Are total life cycle training costs projected to be a significant part of total life cycle costs?

f. Is a stand alone system training device or training capability required to support training in the live, virtual or constructive part of the program?

g. Will there be "negative training" if early ST is not synchronized in the program?

h. Was the program designated a JUON or transitioning from a technology initiative like a JCTD or experiment?

i. Are there significant program inter-dependencies? (Note: "significant" is defined as two or more program overlap.)

j. Is the system (or cross system (meaning between systems)) operation or maintenance concept complex (specifically, the man-machine interface; is a schoolhouse required)?

k. Does the Commercial Off-The-Shelf (COTS) hardware or software integral to the program require an ST solution that is not part of the COTS product?

l. Is embedded training or embedded instrumentation feasible and appropriate? (reference w.)

m. Will realistic live training be restricted by cost, environmental, or safety, increasing the reliance on virtual or constructive training capabilities?

ENCLOSURE C

INFORMATION TECHNOLOGY REQUIREMENTS OVERSIGHT AND
MANAGEMENT

1. Background: IT programs are dynamic in nature and have, on average, produced improvements in performance every 12-18 months. In recognition of this, the JROC requires that IT programs have the flexibility and the planning in place to incorporate evolving technologies throughout the lifecycle of the program.

2. Purpose. The purpose of the “IT Box” is to describe the overall bounds of an IT program in order to facilitate program initiation, as well as to reduce subsequent return trips to the JROC for approval of improved capabilities as the program is executed. The information in the chart will be provided to the JCB/JROC as part of the approval process for any IT program CDD. For programs beyond Milestone B, the IT Box will be included in the approval process for their CPD.

3. Definition. For the purposes of this section, the “IT Box” applies to systems where there is no need to develop hardware systems (i.e., they use commercial off-the-shelf hardware). Research and development funding is spent solely on software development.

4. Description. The four sides of the “IT Box” (Figure C-1) are intended to present and frame the complete program for JCB and JROC members using one slide. The information covers organization and oversight of the program, hardware refresh and system enhancements, integration, application and system software development, and KPP. These four areas should provide a clear understanding to the JCB and JROC that the program has an oversight

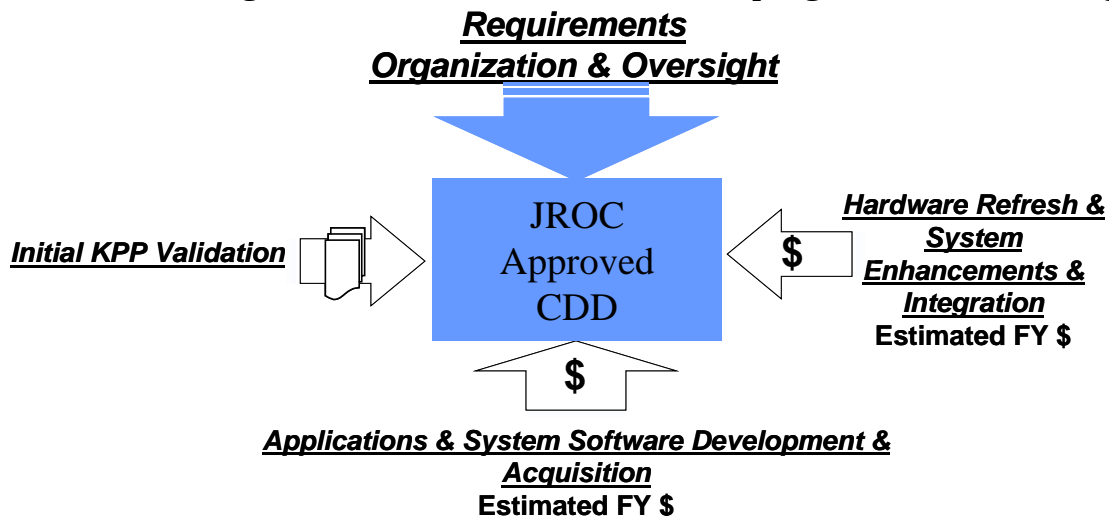


Figure C-1. Requirements Oversight and Management for IT Systems

body providing governance and protection of stakeholder interests; has anticipated milestones for insertion of improved technology, is fully funded for hardware and software development over the lifecycle of program, and has appropriate, measurable and testable KPPs.

a. Key Performance Parameters (KPPs). The KPPs should represent the initial level of performance required for the entire IT program.

b. Requirements Organization and Oversight. The objective is to ensure appropriate requirements governance throughout the lifecycle of the program. This body will determine the schedule and content of the releases of capability based on collaboration between the users and the program manager.

(1) Name the Flag-level body that holds authority over and provides governance for requirements for this IT program.

(2) Identify the Chair of the oversight body.

(3) Identify the organizations represented on this body. This should include all stakeholders to ensure all interests are represented, including the acquisition community to provide advice on technical feasibility, cost and schedule.

c. Hardware Refresh and System Enhancements & Integration:

(1) Identify the total planned program cost for delivering the capability.

(2) Identify the plan and potential cost for hardware and system integration.

(3) Identify the plan and cost for technology refresh per fiscal year.

d. Applications and System Software Development and Acquisition:

(1) Identify the level of effort funding which will be used for the software development effort per fiscal year.

(2) Identify the total program costs for application and system software development and/or integration. Do not describe as fiscal year since these items should be a flat rate over the lifetime of the program, i.e., \$8M per year.

(3) Identify how often new releases will be delivered for enhanced or new capabilities.

ENCLOSURE D

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 KM/DS tool (see Figure D-1). The KM/DS tool will be used by DOD components to submit documents and comments for O-6 and General/Flag Officer (G/FO) reviews, search for historical information, and track the status of documents. The KM/DS tool may be found on the SIPRNet at:

<http://jrockmds1.js.smil.mil/guestjrcz/gbase.guesthome> .

b. Services and other DOD components conducting JCIDS analyses may generate ideas from the JOpsC and CONOPS leading to ICDs, CDDs, CPDs and joint DCRs. JCIDS initiatives can 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 Defense agency become the sponsor for the initiative. Further proposal development would then become the responsibility of the sponsor.

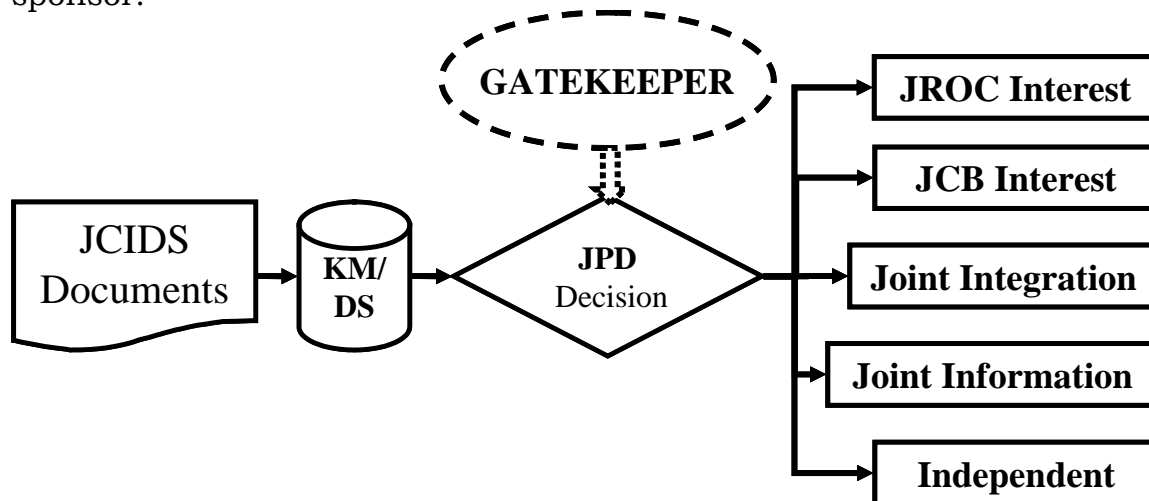


Figure D-1. JCIDS Gatekeeper Process

(1) Document Submission. All JCIDS documents (ICDs, CDDs, CPDs and joint DCRs) and business cases for defense business systems will be entered in the KM/DS tool by the sponsor for DOD component 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 JCB for validation and approval. All documents undergoing the review process are considered draft until after validation and/or approval by the designated validation authority.

(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 x.

(c) Documents for highly sensitive classified programs will be transmitted in a hard copy form to the Joint Staff/J-8 Requirements Management Division (RMD), in accordance with appropriate classification guidelines and handling procedures. For documents classified higher than Secret, 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 J-8/Deputy Director for Requirements (DDR), is the Gatekeeper for the JCIDS process.

(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 consider 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," "JCB Interest," "Joint Integration," "Joint Information" or "Independent" to the JCIDS document. All weapons and munitions will be designated Joint Integration as a minimum. All defense business systems complying with the Defense Business Systems Management Committee (DBSMC) approved process will be assigned a JPD as appropriate. The

Gatekeeper will then assign the document to a lead FCB for further assessment and may designate other FCBs to support the process. Capability documents assigned to the four enabling portfolios (battlespace awareness, command and control, logistics and net-centric) will be presumed to be joint interest and therefore will be given a JROC Interest. The JPD for these documents may be downgraded to JCB Interest or Joint Integration based on recommendations from the Lead FCB and/or the JCB. Capability documents in the protection, force application, force support, or building partnerships portfolios will be presumed to be Joint Information or Independent unless other factors such as cost or certification requirements require a different JPD. They will be elevated to the JROC when recommended by the Gatekeeper, the lead FCB, and the JCB. Any document, regardless of the assigned JPD, may be briefed to the JROC when significant unresolved issues exist.

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

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

(c) "Joint Integration" designation will apply to ACAT II and below programs where the capabilities and/or systems associated with the document do not significantly affect the joint force and an expanded joint review is not required. Staffing is required for applicable certifications (information technology and NSS interoperability and supportability and/or intelligence), and for a weapon safety endorsement, when appropriate. Once the required certification(s)/weapon safety endorsement are completed, the document may be reviewed by the FCB. Joint Integration documents are validated and approved by the sponsoring component.

(d) "Joint Information" designation applies to ACAT II and below programs that have interest or potential impact across Services or agencies but do not have significant impact on the joint force. No certifications or endorsements are required. Once designated Joint Information, staffing is required for informational purposes only and the FCB may review the

document. Joint Information documents are validated and approved by the sponsoring component.

(e) “Independent” designation will apply to ACAT II and below programs where the capabilities and/or systems associated with the document do not significantly affect the joint force, an expanded review is not required, and no certifications or endorsements are required. Once designated Independent, the FCB may review the document. Independent documents are validated and approved by the sponsoring component.

(3) Using the KM/DS tool, the Joint Staff/J-8 will maintain a database of JCIDS documents processed through the JCIDS process. The database will help the Gatekeeper ensure consistency of staffing as JCIDS proposals progress through the JCIDS process.

(4) The JCIDS process also recognizes that not all capabilities require the same level of joint consideration. The JROC has identified several alternative paths to allow validation of capability gaps and potential solutions, and to allow programs to enter into the JCIDS process at the appropriate MS to deliver those capabilities more rapidly. In order to ensure appropriate joint oversight, all JCIDS documents are assigned a JPD by the JCIDS Gatekeeper. The assigned JPD determines the associated staffing process and the validation authority. The tracks associated with each JPD are shown in Figure D-2 with the validation authority identified in the last block on each track.

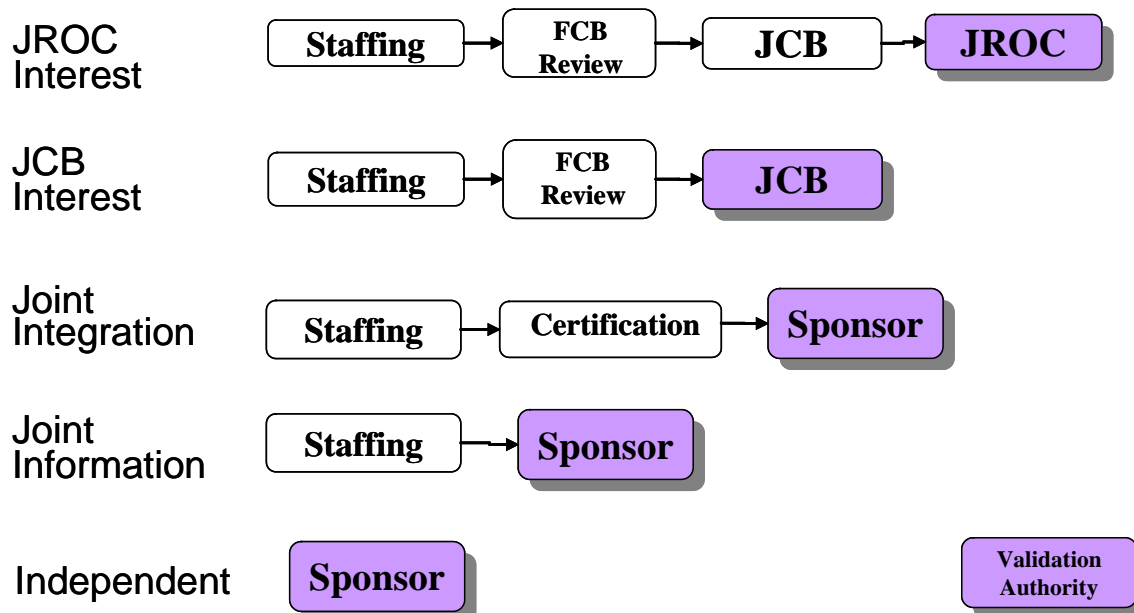


Figure D-2. Approval Tracks by JPD

(5) Once the JPD has been assigned, the document will move into the staffing and approval process. Table D-1 lists the organizations that will typically be asked to staff and comment on any JCIDS document based on the

assigned JPD. **Combatant command and acquisition community review will be included in the staffing of any JROC Interest, JCB Interest or Joint Integration proposal. This will ensure the JROC is informed of any warfighter issues prior to validating capability documents.**

Table D-1. Staffing Matrix

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

L/S = lead/supporting FCB
S = Sponsor staffing only
X = Required staffing
C = Certification
E = Weapon Safety Endorsement

2. Certifications and Weapon Safety Endorsement. Applicable certifications and the weapon safety endorsement will be processed as part of the staffing process for each JCIDS document. If a certification/endorsement authority determines the content is insufficient to support a required certification/endorsement, it is the sponsor's responsibility to resolve the issue with the certification/endorsement 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, JCB Interest and Joint Integration 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 y. For programs with Joint Information or Independent JPDs, which DIA does not review or validate, DOD components can validate threat information by using DIA-validated threat reference information and/or data contained in DOD Service Intelligence Production Program products and data.

(2) Intelligence Certification. Joint Staff/J-2 will :

(a) Certify all ICDs, CDDs, and CPDs designated with JROC Interest, JCB Interest, and Joint Integration JPDs for minimal requirements for intelligence completeness and supportability in accordance with reference y.

(b) Assess intelligence support needs for completeness, supportability, and impact on joint intelligence strategy, policy, and architectural planning as outlined in reference y.

(c) Bring unresolved intelligence issues to the attention of the appropriate FCB(s) in accordance with reference y.

(d) Post completed threat validation and intelligence certifications with the associated document in KM/DS.

(e) Review and comment on intelligence requirements and deficiencies outlined in Information Support Plans.

b. IT and NSS Interoperability and Supportability Requirements Certification – (Joint Staff/J-6) The J-6 will:

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

(2) Certify compliance with DOD Enterprise Architecture and solution architectures, interoperability standards, and net-centric data sharing in accordance with references p, q, r, s, and z.

(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 r and as directed by references p and q.

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

(6) Forward the IT and NSS interoperability and supportability certification to the FCB (for programs designated as JROC Interest or JCB 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.

c. Weapon Safety Endorsement

(1) The J-8/Deputy Director for Force Protection (DDFP) will provide a weapon safety endorsement coordinated through the Protection FCB as part of the JCIDS staffing of ICDs, CDDs, CPDs, and joint DCRs regardless of ACAT level for weapons, as defined in the Glossary. A weapon safety endorsement is the means for documenting the extent to which weapon capabilities documents provide for safe integration into joint warfighting environments. Endorsement recommendations will be prepared by the Joint Weapon Safety Technical Advisory Panel (JWSTAP) and submitted to the J-8/DDFP for appropriate staffing and coordination with the Protection FCB.

(2) The endorsement will indicate that required joint warfighting environment attributes and performance parameters, from a weapon safety perspective, are judged to be adequately prescribed in the ICD, CDD, CPD, or joint DCR. The endorsement may also convey identified limitations in the prescribed attributes or performance parameters that are deemed acceptable from a weapon safety perspective, yet foreseen as potential military utility hindrances or joint operation limitations. If the weapon safety endorsement identifies restrictions/limitations, the sponsor will coordinate with the Protection FCB for resolution or acceptance of the restrictions/limitations.

3. Staffing Process. The Joint Staff/J-8 RMD will staff all JROC Interest and JCB Interest proposals (Figure D-3) before FCB review and Joint Integration

proposals for certification (Figure D-4) to the organizations listed in Table D-1. Concurrent staffing of ICDs, CDDs, and CPDs for the same system is not permitted. During the review process, the FCB working groups will evaluate how well the proposed approaches documented in a CDD, CPD, or joint DCR addressed the capability gaps identified in the ICD and supporting CBA. This process will include an O-6 review. The requirement for G/FO-level reviews will be determined by the FCB based on the status of unresolved critical comments. The sponsor may withdraw a document at any time during the staffing process.

a. Document Review Phase 1. Joint Staff/J-8 RMD will review and verify the document's format for accuracy and completeness. For this 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 21 calendar days from the date the Gatekeeper releases the document for staffing. This review will include the Stage I review and commenting for initial threat validation and intelligence, IT, and NSS interoperability and supportability requirements certifications and weapon safety endorsement, as required. Comments should be prioritized as critical, substantive, or administrative (see definitions in the Glossary). Convincing support for critical and substantive comments will be provided in a comment and justification format.

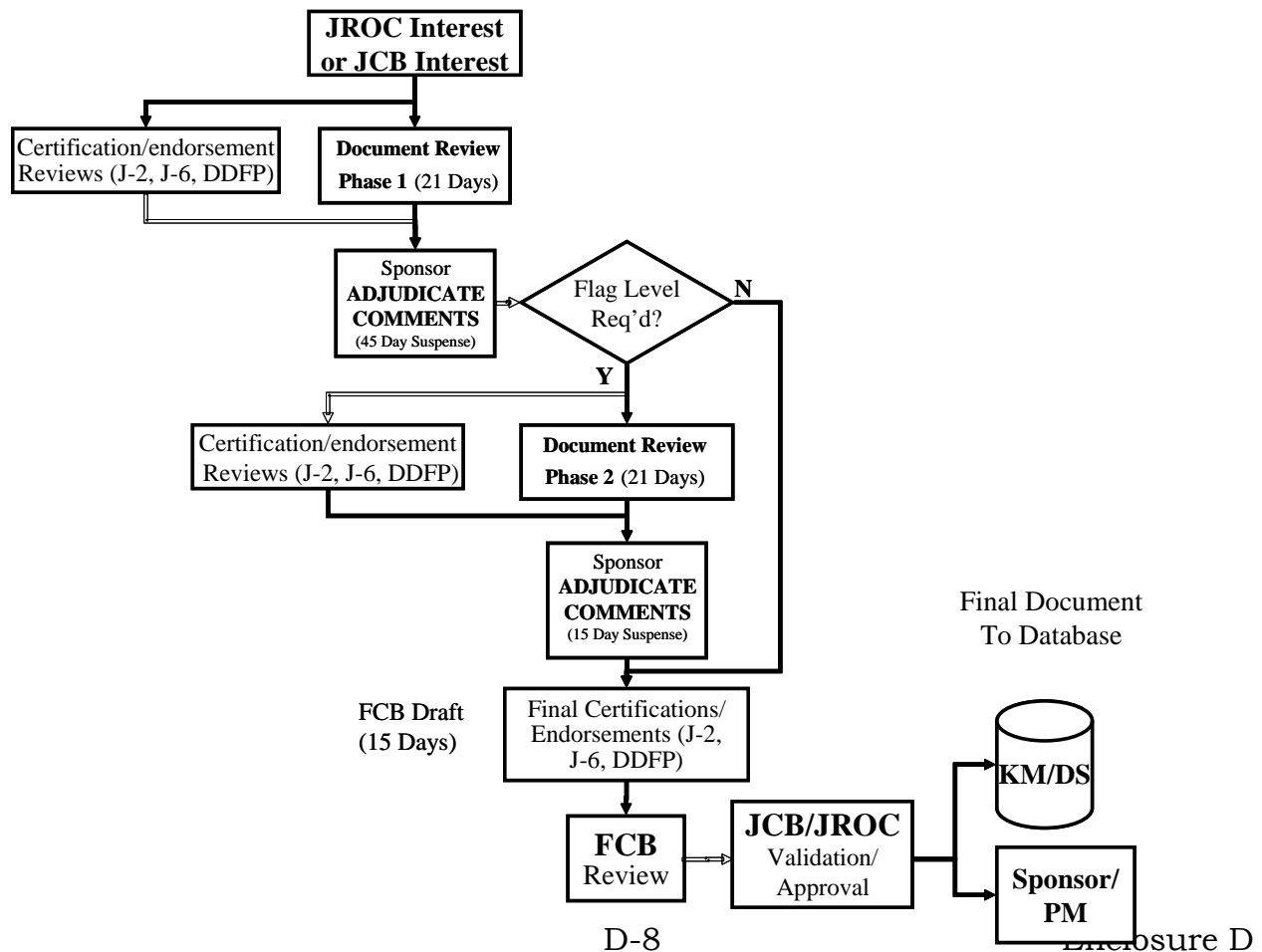


Figure D-3. JROC Interest and JCB Interest Staffing Process

b. Resolution of Document Review Phase 1 Comments. Joint Staff/J-8 CAD will release all comments to the sponsoring DOD component via KM/DS for resolution. The sponsor has 45 days to resolve comments. After revision of the document to reflect comment resolution, the sponsor will return it to Joint Staff/J-8 CAD via KM/DS. The sponsor will provide a comment resolution matrix delineating the critical and substantive comments, the results of the intelligence, interoperability, and munitions supportability certifications, and the weapon safety endorsement recommendations received and the actions taken. If all comments are successfully resolved, it does not require G/FO-level staffing, and the document will be submitted as an FCB Draft for validation and approval. If the sponsor requires additional time to resolve comments, a request to extend the suspense is made through the lead FCB. An extension of less than 15 days can be approved by the FCB action office. An extension of 15 days or greater must be approved by the FCB Chair. If there are unresolved critical comments, the document will be submitted for G/FO-level staffing. Documents may proceed to formal FCB review with unresolved critical comments if the sponsor and FCB agree that further staffing will not result in resolution of the issues. For ease of review, all changes to the document should be highlighted. If the document is not resubmitted or an extension to the suspense granted by the FCB, the Joint Staff/J-8 will assume the sponsor intends to pull the document from the approval process and resubmit it at a later date.

(1) Resolving Critical Comments. Resolve comments as the lowest possible level. If the document sponsor disagrees with a critical comment or the resolution requires a subjective response from the sponsor, contact the comment originator to work toward a mutually agreeable solution. The method, point of contact and date of resolution must be documented in the comment resolution matrix. If the resolution requires the substitution or addition of commenter provided wording, sponsor resolution should indicate the comment was accepted and the comment originator need not be contacted. If critical issues cannot be resolved at the action officer level, the issue should be elevated to the FCB, then JCB, then JROC as necessary to achieve resolution.

(2) Resolving Substantive and Administrative Comments. The document sponsor will determine whether or not to accept substantive and administrative comments. There is no requirement to consult with the comment originator. The sponsor should provide rationale in the comment resolution matrix for not accepting a substantive comment.

c. FCB Working Group Assessment. The lead FCB working group may begin an assessment immediately after the Gatekeeper actions are complete. As a minimum, this review will include a timely review of the assigned JPD. If

a change to the JPD is required, the Gatekeeper should be notified as soon as practical to prevent unnecessary delay in validating and approving the document. The sponsor will work with the lead FCB action officer to present the document to the working group to allow a full and rigorous independent assessment of the submitted document and supporting analysis (CBA, AoA, etc.). The sponsor and working group will resolve all issues or submit those they cannot resolve to the FCB.

d. Document Review Phase 2. The G/FO-level review is conducted if critical comments remain unresolved from the O-6 review and the sponsor and lead FCB agree that further staffing may help to resolve the critical comments. This review will focus on resolving the open critical comments and on the proposed resolution of critical comments submitted previously. This review will include Stage II threat validation and intelligence supportability, IT and NSS interoperability certifications and weapon safety endorsement, as required. The suspense date assigned for providing comments and/or concurrence will normally be 21 calendar days from date the Gatekeeper releases the document for staffing. If the sponsor and the lead FCB agree that further staffing will not help to resolve the open critical comments, the document will proceed to the FCB Draft phase.

e. Resolution of Document Review Phase 2 Comments and Briefing Preparation. Upon completion of this review, Joint Staff/J-8 CAD will release all comments to the sponsor via KM/DS for final resolution. The sponsor has 15 days to resolve comments from G/FO-level review. Unresolved critical comments will be brought to the FCB for assistance in resolution. Comments that cannot be resolved with FCB assistance within 15 days 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 the JROC Administrative Guide on the SIPRNet at (http://www.intelink.sgov.gov/wiki/Joint_Requirements_Oversight_Council_Admin_Guide) 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 and Weapon Safety Endorsement. Upon final resolution of comments and submission of the FCB Draft version of the document to KM/DS, the J-8/DDFP, 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 supportability and intelligence certifications and weapon safety endorsement. Upon satisfactory review, the J-6 will issue the interoperability and supportability certification (reference r), J-2 will issue intelligence certification (reference y), and J-8/DDFP will issue the final weapon safety endorsement. Certifications and endorsements should

be received within 15 days of the FCB Draft document submission into KM/DS.

g. FCB Review. When the staffing process is complete for JROC Interest and JCB Interest documents, the lead FCB will review the results and make a recommendation to the JROC/JCB regarding validation and/or approval of the document, as shown in Figure D-3. If there were unresolved critical comments, the FCB will identify the issues and make a recommendation to the JROC/JCB on resolution.

(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 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) JCB Interest Documents. The FCB will evaluate and forward the JCIDS documents to the JCB, for validation. A representative from the FCB will set the stage for the JCB 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 within the FCB's portfolio. The sponsor will then deliver the decision briefing. The JCB will validate and approve the proposal or return it to the sponsor for additional information, as required.

(3) JROC Briefing Format and Schedule. Briefings delivered to the FCB, the JCB, and the JROC will be prepared in accordance with the JROC Administrative Guide on the SIPRNet at (http://www.intelink.sgov.gov/wiki/Joint_Requirements_Oversight_Council_Admin_Guide). The sponsor will provide the updated draft document and briefing slides three working days 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.

(4) Approved Documents. The sponsor will ensure that the approved document is posted to the KM/DS database for future reference.

h. Functional Process Owner (FPO) Review of Joint DCRs. FPOs will provide an assessment of their specific functional process during their review of the joint DCRs during Phase 1 and Phase 2 of the document staffing.

i. Sponsor Validation and Approval. If a document is assigned a JPD of Joint Integration, Joint Information, or Independent, it will move into the validation and approval process as shown in Figures D-4 and D-5. The FCB may review the document for JPD accuracy and possible joint implications.

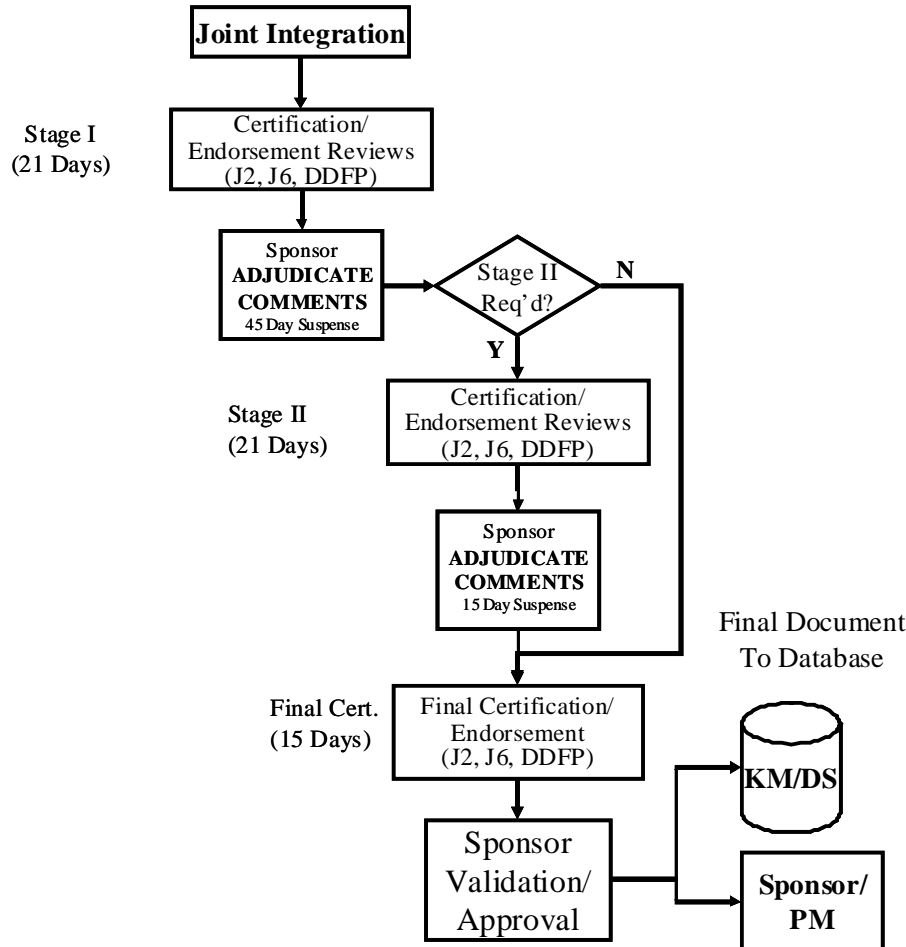


Figure D-4. Joint Integration Staffing Process

Following the review, the FCB may make recommendations to the Gatekeeper for redesignation of the JPD if required. If the JPD change is approved, the staffing process will be changed to reflect the new JPD.

(1) Joint Integration proposals in an ICD, CDD, or CPD will be staffed by Joint Staff/J-8 CAD through Stage I staffing for IT and NSS interoperability and supportability (not applicable for ICDs) and intelligence certifications and weapon safety endorsement. Documents will be resubmitted for Stage II staffing if there are unresolved critical comments from Stage I or if directed by the lead FCB. Both Stage I and Stage II reviews are conducted at the O-6 level for 21 days once the Gatekeeper releases the document for staffing. 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. All final weapons-related documents and their adjudicated comment resolution matrix shall also be submitted to the J-8/DDFP for review and formal endorsement. The document will then be returned to the sponsor for final validation and approval.

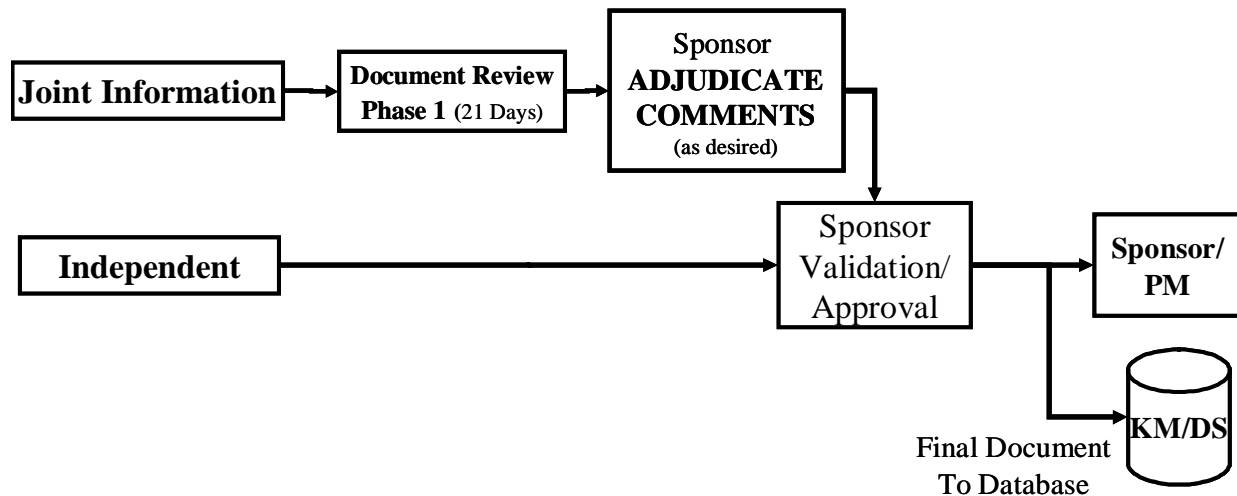


Figure D-5. Joint Information and Independent Staffing Process

(2) Documents designated as Joint Information will be staffed by Joint Staff/J-8 CAD through Document Review Phase 1 staffing (the same as that for JROC Interest) for informational purposes only and may be reviewed by the lead FCB (Figure D-5). Reviewers recommending a change in the document's JPD should notify J-8 as early as possible; the final JPD decision will be made by the Gatekeeper. Disposition of the comments is at the discretion of the sponsor unless the JPD is changed. Upon completion of staffing, the document and comments will be returned to the sponsor for resolution of the comments as they desire followed by validation and approval.

(3) Documents designated as Independent may be reviewed by the FCB (Figure D-5). They will be returned to the sponsor for validation and approval.

(4) When Joint Integration, Joint Information, and Independent documents are approved, the sponsor will post them to the KM/DS database for future reference.

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

(2) CDD and CPD changes will be resubmitted for staffing and approval under three circumstances:

(a) The document has a JPD of JROC Interest or JCB Interest and the changes impact the KPPs. Documents being updated with minor changes to the KPPs (or other changes if non-KPP approval was not delegated) will be reviewed by the lead FCB to determine if formal staffing is required. If changes are significant enough to require staffing, the standard process will apply. If no staffing is required, the status will be updated to reflect FCB Draft and the document will proceed through the validation and approval process.

(b) The document has a JPD of JROC Interest or JCB Interest, the changes do not affect the KPPs, and validation authority for non-KPP changes has not been delegated to the sponsor by the JROC or JCB. The document will be reviewed by the lead FCB to determine if formal staffing is required. If changes are significant enough to require staffing, the standard process will apply. If no staffing is required, the status will be updated to reflect FCB Draft and the document will proceed through the validation and approval process.

(c) The document has a JPD of JROC Interest, JCB Interest or Joint Integration and the changes only affect the NR-KPP. The document will be staffed to Joint Staff/J-6 for recertification of the NR-KPP via KM/DS. The Joint Staff/J-6 will determine if staffing is required prior to recertification.

(d) 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.

4. Waivers. If the sponsor is requesting a waiver to the JCIDS documentation requirements, the waiver will be submitted in the form of a memorandum addressed to the Joint Staff/J-8. The process is as follows:

a. The waiver request will be submitted into KM/DS as the document type that is being waived (e.g., ICD waiver request will be submitted as an ICD document type) with the staffing stage set to FCB Draft.

b. The Gatekeeper will assign the waiver request to the lead FCB and a Joint Staff/J-8/CAD Action Officer.

c. The lead FCB, in coordination with the CAD Action Officer, will develop a recommendation for approval/disapproval of the waiver. The request will be approved/disapproved by the Gatekeeper.

d. The final approval/disapproval memorandum will be attached to the request in KM/DS.

5. JCIDS Document Relationships. Figure D-6 illustrates some of the more common relationships between JCIDS documents.

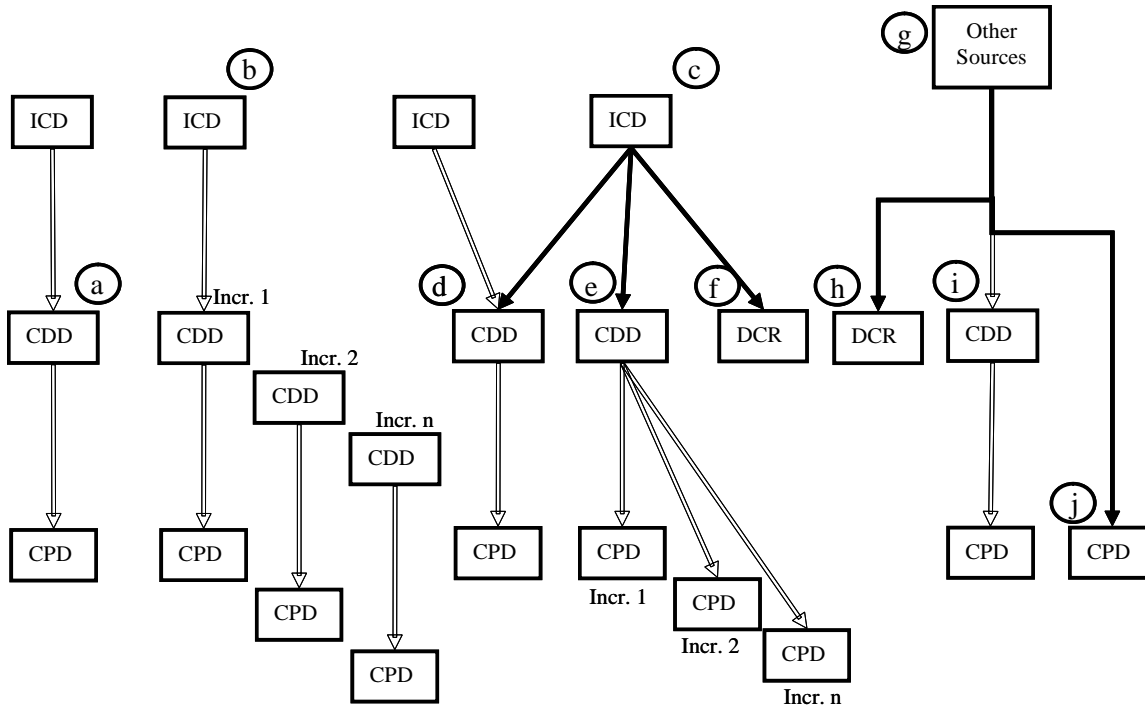


Figure D-6: JCIDS Document Relationships

a. An ICD may be the source for a single CDD with a resultant CPD.

b. An ICD may be the source for a system or a SoS that will require incremental development under an evolutionary acquisition strategy. This requires a CDD and a CPD for each increment of the system or SoS.

c. An ICD may be the source for multiple CDDs where an SoS or FoS is required to deliver the capability.

(1) For an SoS example, the ICD for a capability for precision strike could result in a CDD for the aircraft, separate from the CDD for the munitions.

(2) For an FoS example, the Army develops an ICD for a capability to provide rapid transport of passengers or cargo, which results in a CDD for an Army fixed-wing solution. The Marine Corps may use that same ICD as the basis for developing a rotary-wing solution CDD.

d. Two or more ICDs may be the source for a single CDD. For example, an ICD for long-range heavy lift transport and an ICD for air-to-air refueling may be combined to justify a single aircraft.

e. A CDD may be used for two or more CPDs where incremental development under an evolutionary acquisition strategy is used.

f. A joint DCR may be developed based upon the analysis in an ICD. For example, an ICD may identify several capability gaps. The analysis for those gaps indicates that one or more may be partially or wholly satisfied through a non-materiel change. This becomes the basis for the joint DCR.

g. Other sources may be used to justify entering the JCIDS process without an ICD. These sources include, but are not limited to, combatant command Integrated Priority Lists (IPL), joint and Service lessons learned, joint assessments (e.g., Global War on Terror), JUONs, Service urgent needs, IED defeat initiatives, JCTDs, qualified prototype projects, and quick reaction technology projects. Once the JROC has validated the gap identified in the source, the sponsor can initiate development of a CDD or CPD as appropriate.

h. A joint DCR may be developed directly from many sources, including the result of an experiment, lessons learned, or other sources.

i. A CDD may be based on these other sources if the capability solution requires additional development prior to fielding.

j. A CPD may be based on these other sources if the capability solution does not require development effort (i.e., a non-developmental item) or is a commercial-off-the-shelf solution and is not being implemented as part of a broader DCR.

ENCLOSURE E

ROLES AND RESPONSIBILITIES

1. Functional Capabilities Boards (FCB):

- a. Ensure that DOTMLPF and policy aspects of new capabilities are being appropriately considered in the JCIDS documents. This includes overarching DOTMLPF or policy changes necessary to meld an FoS or SoS with multiple CDDs and CPDs into an effective capability.
- b. Will participate in cross-FCB integration meetings to ensure cross-functional integration of capabilities, prioritization of capability gaps, and excesses across the FCB portfolios to identify potential tradeoffs between capability areas, to evaluate the effectiveness of and potential improvements to the FCB process, and to provide recommendations to the JROC.
- c. Assist in the resolution of comments written during the JCIDS staffing process. If critical comments cannot be adjudicated during staffing, the FCB will make a recommendation to the JCB/JROC on the resolution of the comments.
- d. Will evaluate the KPPs submitted by the sponsor and identify other potential KPPs that warrant consideration by the JROC. The lead FCB will coordinate across supporting FCBs on the selection and validation of KPPs.
- e. Ensure that Director, **Cost Analysis and Program Evaluation (D,CAPE)**, the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD(AT&L)), the Assistant Secretary of Defense (Networks & Information Integration)/CIO (ASD(NII)/CIO) and the Business Transformation Agency (BTA) have the opportunity to participate in or review all FCB activities. **Ensure these offices have been engaged in the determination of the IOC for potential MDAP capabilities.** When the FCB is formulating a recommendation that may impact directly upon an MDA or other principal staff assistant (PSA), that office will be invited to co-chair the FCB. **DCA&PE**, USD(AT&L), and ASD(NII)/CIO should be engaged early to ensure that the CBA adequately addresses a sufficient range of materiel approaches.
- f. Invite the Director, National Intelligence/Intelligence Resources Board (DNI/IRB) staff to send a representative to attend or co-chair the FCB meeting when proposals/documents potentially impacting national intelligence capabilities come to the FCB for validation or approval.
- g. Request, as necessary, DOD components to support FCB activities in support of the JCIDS process. Tasking issues that cannot be resolved between

the FCB(s) and the component(s) will be forwarded to the JROC (through the JCB) for resolution. When support from organizations reporting to the Secretary of Defense is required, the FCB Chairman will seek this support from the responsible office within OSD.

h. Ensure that overarching joint DCRs are consistent with the JOpsC or applicable CONOPS, and support joint warfighting capability needs.

i. Evaluate the assigned JPD of all initiatives and make a recommendation to the Gatekeeper to change the JPD as required. Recommendations to change the JPD should be made as quickly as possible prior to the completion of staffing to prevent unnecessary delays.

j. Ensure that appropriate certifications and endorsements have been granted.

2. FCB Working Groups. The FCB working groups will operate in accordance with reference aa. In support of the JCIDS process, each FCB working group will:

a. Coordinate with and assist the sponsor during JCIDS document development to ensure cross-component synchronization of documents and that joint warfighting capability gaps are being adequately addressed.

b. Support the Gatekeeper in determining the JPD and the lead and/or supporting FCBs for each JCIDS document.

c. When FCB is assigned as lead: analyze JCIDS documents and coordinate with supporting FCB working groups to ensure all joint and coalition warfighting aspects have been considered in the analysis. Provide context and a summary of the FCB working group's independent assessment regarding JCIDS documents to the FCB when considering capabilities documents.

d. Evaluate the KPPs submitted by the sponsor and identify other potential KPPs that warrant consideration by the JROC. The lead FCB will coordinate across supporting FCBs on the selection and validation of KPPs.

e. When FCB is assigned as supporting: coordinate with and support the lead FCB working group analysis of JCIDS documents and will provide supporting context information and a recommendation to the lead FCB. As directed by the Gatekeeper, the supporting FCB may be required to brief their recommendations to the JCB/JROC.

f. Provide a summary analysis and recommendation to the FCB on validation and/or approval of JCIDS documents.

3. Sponsor. The JCIDS document sponsor will:

- a. Make affordability determinations in the evaluation of various approaches to delivering capabilities to the warfighter.
- b. Develop JCIDS documentation as specified in this instruction and present this documentation for review through the KM/DS tool.
- c. Develop a CDD, CPD, or joint DCR, as appropriate, to support the acquisition or fielding of a capability demonstrated through a JCTD, qualified prototype project, or quick reaction technology project.
- d. Resolve issues that arise during the staffing, certification, and validation processes. All comments will be adjudicated prior to JCB and JROC briefings. Unresolved critical comments will be briefed to the JCB or JROC for decision.
- e. When the system contributes to FoS or SoS capabilities, coordinate with sponsors of the related joint DCRs, CDDs, and CPDs to synchronize development and delivery of the systems and required overarching DOTMLPF and policy changes.
- f. Present briefings to decision bodies, as required.
- g. When the sponsor disagrees with the assigned JPD, appeal to the FCB or the Gatekeeper by providing a memorandum with justification for changing the JPD.

4. Services. The Services will coordinate on JROC Interest and JCB Interest documents and may review Joint Integration, Joint Information, and Independent documents developed by other sponsors to identify opportunities for cross-component utilization and harmonization of capabilities. This coordination and review may lead to a recommendation to change the JPD.

5. Joint Staff.

- a. Joint Staff Director, J-1. Joint Staff/J-1 is the office of primary responsibility for joint manpower and personnel reviews. In accordance with references bb and cc, Joint Staff/J-1 will review all joint manpower and personnel requirements and issues identified in joint DCRs. It will review JCIDS documents for adequacy of joint manpower and personnel planning.
- b. Joint Staff Director, J-2, and Director, DIA. Joint Staff/J-2 will review and conduct intelligence certification in accordance with reference y. DIA will also perform a threat validation. Additionally, Joint Staff/J-2 will conduct intelligence certification of requirements, deficiencies, and solutions documented in the information support plans in accordance with references q and y. DIA will produce an Initial Threat Environment Assessment (ITEA) to

support the development of an ICD, the materiel development decision and a subsequent materiel solution analysis. Once the list of alternatives has been identified, DIA will produce the ITEA to identify specific adversary threat capabilities that could affect the solutions identified.

c. Joint Staff Director, J-3. Joint Staff/J-3 is the office of primary responsibility for the current Global Command and Control (GCC) family of systems, future command and control capabilities, and the common operational picture in accordance with reference dd. Joint Staff/J-3 will review all GCCS functional capabilities identified in CDDs and CPDs as well as non-materiel changes proposed in joint DCRs. It will review and comment on all JCIDS documents designated as JROC Interest or Joint Integration for operational suitability, sufficiency, and supportability to the warfighter.

d. Joint Staff Director, J-4. The Joint Staff/J-4 will:

(1) Be responsible for joint facilities reviews. It will review JCIDS documents for adequacy of facility planning and design criteria and environmental, safety and occupational health (ESOH) considerations regarding basing and operation. Additionally, when documents include materiel solutions, Joint Staff/J-4 will review logistics and supportability issues, to include ensuring the system's initial and/or temporary facility requirements are within existing engineer force capabilities.

(2) Review and comment on the sustainment (materiel availability) KPP and its supporting KSAs (materiel reliability and ownership cost) for all JROC Interest CDDs and CPDs.

(3) Review and comment on the energy efficiency analysis and recommendations (e.g., selectively apply an energy efficiency KPP or not) for all JROC Interest CDDs and CPDs.

e. Joint Staff Director, J-5. The Joint Staff/J-5 will act as Chairman, Joint Chiefs of Staff (CJCS) Executive Agent for implementing JROC decisions regarding multinational and interagency requirements and joint DCRs with multinational or interagency impacts. The Joint Staff/J-5 will provide oversight on alignment between JCIDS proposals/documents, strategy, and CJCS priorities.

f. Joint Staff Director, J-6. The Joint Staff/J-6 will:

(1) Perform IT and NSS interoperability and supportability certifications on all CDDs and CPDs designated as JROC Interest, JCB Interest or Joint Integration in accordance with references p, q, and r. This certification will include evaluation of compliance with the DOD Net-Centric Data Strategy (reference z) through collaboration with the communities of interest that apply

to these capabilities. Additionally, Joint Staff/J-6 will be the lead for validating the NR-KPP and will resolve all issues associated with the NR-KPP (reference r).

(2) Ensure that CDDs and CPDs include “embedded instrumentation” in system tradeoff studies and design analyses.

g. Joint Staff Director, J-7. The Joint Staff/J-7 will:

(1) As the CJCS lead for the JOpsC, oversee the writing, development, and revision of the JOpsC (reference g). It will review recommendations resulting from assessment and experimentation that will affect DOTMLPF and/or policy and forward those recommendations to the JROC through the appropriate FCB.

(2) Be responsible for Joint Doctrine, Training, and Leadership/Education reviews. It will work with combatant commanders, Services, Joint Staff, OSD, and Defense agencies to ensure each joint DCR adequately addresses potential impacts on joint, multinational and interagency warfighting, and other operations with respect to joint doctrine (reference ee), joint training (references ff and/or gg), and joint leadership and education (reference hh) resulting from implementation of the proposed concept or employment of the system.

(3) Review and comment on the recommendations pertaining to the inclusion of the selectively applied systems training KPP for all JROC Interest CDDs, CPDs, and the supporting analysis.

(4) As the JCA Coordinator, facilitate and oversee future JCA development, host planner-level JCA refinement meetings, and G/FO level reviews and champion JCA lexicon implementation across DOD processes.

h. Joint Staff Director, J-8.

(1) The Deputy Director for Requirements/J-8 will be the JCIDS Gatekeeper.

(a) The Gatekeeper will chair meetings of the G/FO chairs of the FCBs to ensure cross-functional area integration, prioritization of capabilities across the FCB portfolios, and identification of FCB best practices for improvement of the FCB processes.

(b) The Gatekeeper will make the initial determination on the following (Joint Staff J-8/RMD):

1. JPD assignment and who has validation and/or approval authority.

2. The lead and supporting FCBs.

3. Assigned J-8 CAD lead.

(c) Evaluate the recommendations of the lead FCB and/or sponsor to change an assigned JPD and, if necessary, adjust the assigned JPD to appropriately reflect the joint warfighting impact of the proposal.

(d) Evaluate the recommendation of the lead and supporting FCBs to change the FCB assignments and, if necessary, make appropriate changes.

(2) Review all joint DCRs and assess whether existing joint organizations effectively support integration and operational employment of the proposed system or concept (Joint Staff/J-8 Forces Division).

(3) Review all joint DCRs for proposed materiel solutions and staff materiel issues (Joint Staff/J-8 CAD).

(4) Coordinate all joint DCRs entering JCIDS with the following responsibilities (Joint Staff/J-8 RMD):

(a) Link JROC and JCIDS process to joint transformation efforts in current DOTMLPF and policy.

(b) Facilitate joint DCR staffing and review from entry into KM/DS through final JROC approval.

(c) Coordinate the objective assessment of joint DCRs by FPOs in each consideration of DOTMLPF and policy.

(d) Synchronize and track implementation of JROC-endorsed joint DCRs via the KM/DS database.

(e) Facilitate preparation of JROCMs from JROC-approved joint DCRs.

(f) As needed, coordinate DOTMLPF action review meetings with the JCB to review status of outstanding joint DCRs.

(g) Attend JROC, JCB, FCB, and FCB working group meetings when joint DCRs are being briefed or discussed to assist in facilitating the recommendations for JROC approval.

(5) Assess the readiness and responsiveness of combat support agencies (CSA) to support operational forces (Joint Staff/J-8 Support Agency Review and Assessment Office).

(a) Review all CSA-submitted JCIDS documents to assess impact on identified CSA warfighting support capability gaps.

(b) Recommend CSA JCIDS actions to correct identified warfighting support capability gaps.

(c) Submit CSA JCIDS action recommendations to the Gatekeeper for dissemination to the appropriate FCB and action in accordance with reference ii.

(6) Weapons or munitions related JCIDS documents will be designated Joint Integration, as a minimum. The J-8/ DDFP shall provide an endorsement to the JROC stating whether the weapon capabilities, performance parameters, and attributes are adequately prescribed in the JCIDS document for safe handling, storage, transportation, or use in joint operational environments. The endorsement will be coordinated through the Protection FCB prior to signature. This endorsement may identify potential operational limitations due to potential hazards when the weapon is handled, stored, transported, or used in joint operational environments.

(a) Establish the JWSTAP per reference jj. The JWSTAP is to advise the DDFP on weapon safety issues pursuant to advising the JROC during the review and deliberation of all weapon and munition capability JCIDS documents. The JWSTAP reviews and provides recommended revisions to the capability documents. The JWSTAP review is focused on the capability attributes and metrics of a given weapon to identify potential safety issues resulting from interaction between the proposed weapon and other capabilities existing within the same joint operational environment.

1. The JWSTAP provides subject matter expertise review and comments to the DDFP regarding the safe employment, storage, and transport of munitions and weapons in joint operational environments. The JWSTAP will advise the DDFP on weapon capability documents requiring validation and approval within JCIDS. The JWSTAP review is focused on the capability attributes and metrics of a given weapon or munition to identify potential safety issues resulting from interaction between the proposed weapon and other capabilities existing within the same joint operational environment. Safety concerns identified by the JWSTAP are presented to the DDFP with recommended revisions to the capability document to reduce or eliminate the identified safety concern while maintaining the desired operational effectiveness of the weapon. The DDFP will forward the proposed recommendations to the FP FCB for review and endorsement. The FP FCB shall inform the capability sponsor of the concerns prior to completing joint staffing. The FP FCB will then forward their endorsement to the JROC, informing the JROC of any safe weapons capability restrictions/limitations.

2. Specifically, the JWSTAP shall:

a. Serve as a source of expert consultation for program sponsors and the DDFP regarding weapon safety aspects of joint operational environments. Participate, as requested, in the development and review of draft JCIDS documents prior to formal submittal into the JCIDS process. Collaborate with program sponsors and the DDFP to develop possible solutions to issues.

b. Review each weapon JCIDS document to ensure weapon safety is addressed with respect to provisions for safe operation, handling, storage, and transport integration into the joint operational environments. Prepare a report for the DDFP documenting the results of the JWSTAP review of the JCIDS document containing the recommended revisions to address joint operational environments safety concerns.

(b) Safety concerns identified by the JWSTAP are presented to the DDFP with recommended revisions to the capability document to reduce or eliminate the identified safety concerns while maintaining the desired operational effectiveness of the munition. If the safety recommendations could affect operational effectiveness, the JWSTAP will also provide possible mitigation strategies to limit the impact on operational effectiveness.

(c) The DDFP will forward the proposed recommendations to the Protection FCB for review and subsequent endorsement to the JROC.

6. Combatant Commands:

a. The commanders of the combatant commands will provide their input to the JROC on joint military requirements. This input may include, but not be limited to, an assessment of the following:

(1) Any current or projected missions or threats in the theater of operations that would inform the assessment of a new joint military requirement.

(2) The necessity and sufficiency of a proposed joint military requirement in terms of current and projected missions or threats.

(3) The relative priority of a proposed joint military requirement in comparison with other joint military requirements within their theater of operations.

(4) The ability of partner nations in their theater of operations to assist in meeting the joint military requirement or the benefit, if any, of a partner nation assisting in development or use of technologies developed to meet the joint military requirement.

b. Combatant commands may review and comment on documents designated as Joint Integration during J-2 and J-6 certification processes and the J-8 safe weapons endorsement prior to sponsor validation and approval. Combatant commands are also given the opportunity to review and comment on Joint Information documents as desired.

c. Combatant commands may conduct a SWarF that identifies capabilities needed and gaps or redundancies that exist. The combatant command leverages the expertise of its components and may coordinate and receive assistance from a sponsor in this effort. In many circumstances, it may be appropriate for the combatant commander to identify initiatives to the responsible component. The component may then coordinate appropriate analysis and documentation activities.

d. US Joint Forces Command

(1) CDR, USJFCOM is functionally responsible to the Chairman for leading joint concept development and experimentation (JCD&E) by integrating joint experimentation into the development of all efforts to support interoperability and develop future joint warfighting capabilities to include those identified through joint concepts (reference g). As the DOD Executive Agent for joint warfighting experimentation, CDR, USJFCOM develops combined operational warfighting concepts and integrates multinational and interagency warfighting transformation efforts with JCD&E in coordination with other combatant commands. USJFCOM also coordinates the efforts of the Services, combatant commands, and Defense agencies to support joint interoperability and future joint warfighting capabilities and will coordinate with Joint Staff/J-7 and concept authors to translate actionable recommendations into ICDs and joint DCRs as appropriate. They will forward ICDs and joint DCRs to the JROC through the Joint Staff/J-8 for coordination, recommendation, and endorsement. USJFCOM will also review all ICDs for potential areas for future joint experimentation efforts.

(2) CDR, USJFCOM will serve as the Chairman's advocate for joint warfighting interoperability and as the lead integrator for joint C2 capabilities. USJFCOM will provide the warfighter perspective during the development of joint concepts and DOD Enterprise Architecture and solution architectures to ensure that joint forces have interoperable systems. USJFCOM will support the JROC by:

(a) Leading the development of joint warfighting C2 capabilities, architectures, and operational concepts.

(b) Identifying, consolidating, prioritizing, and synchronizing materiel and non-materiel gaps and overlaps to joint C2 functional capabilities through the FCBs in the JCIDS process.

e. US Special Operations Command (USSOCOM). Congress has given USSOCOM specific Title 10 authorities within a unique major force appropriation category (reference kk). As a result, USSOCOM can establish, validate, and approve USSOCOM capabilities, budget for Joint Integration, Joint Information, and Independent programs, and resource both special operations-specific materiel acquisition programs and joint DCRs. USSOCOM will coordinate on JROC Interest and JCB Interest documents and may review Joint Integration, Joint Information, and Independent documents developed by other sponsors to identify opportunities for cross-component utilization and harmonization of capabilities. USSOCOM will forward all capabilities documents to the Gatekeeper for initial determination of JPD and potential review by an FCB. Capabilities documents assigned a JPD of Independent or Joint Information will be returned to USSOCOM for action. Joint Integration documents will be returned to USSOCOM for approval after receipt of the appropriate certifications or endorsements as required. JROC Interest and JCB Interest capabilities documents will be forwarded for JCB/JROC validation and approval. In the event USSOCOM identifies joint DCRs that may benefit other DOD components, the joint DCR process provides a venue to submit proposals for JROC consideration. CDRUSSOCOM exercises responsibility to ensure the interoperability, supportability, sustainment, and combat readiness of special operations forces and equipment.

7. National Guard Bureau. The Chief, National Guard Bureau (NGB) will:

a. Be the principal advisor to the Secretary of Defense through the CJCS on matters involving non-federalized National Guard forces;

b. Be responsible for administering joint programs as necessary to effectively integrate National Guard resources and capabilities into DOD joint functions; and

c. Lead the development of National Guard joint capabilities and concepts for National Guard homeland defense and civil support missions.

ENCLOSURE F

INITIAL CAPABILITIES DOCUMENT

1. General

a. The ICD articulates the requirement to resolve a specific capability gap or a set of capability gaps for a given timeframe identified as the result of a CBA. A CBA uses relevant attributes and associated metrics to quantify the prioritized capabilities of systems and/or forces 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 JOpsC or a CONOPS. The ICD defines the capability gaps in the lexicon established for the JCAs, the relevant range of military operations, and the timeframe under consideration. Table F-1 lists the documents that guide or depend on the development of the ICD. The ICD must capture the results of a well-framed CBA, as described in Enclosure A.

Predecessor Documents and Information	Dependent Documents
JOpsC and CONOPS	AoA Guidance
DPS	Technology Development Strategy
DIA Validated Threat Documents	Test and Evaluation Strategy
DOD Enterprise Architectures and solution architectures	Clinger-Cohen Confirmation for MAIS
	CDD
	CPD
	System Engineering Plan
	Joint DCR

Table F-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. These DOTMLPF and policy changes may lead to the development of a joint DCR.

d. ICDs will be generated, validated, and approved to define and review the non-materiel options for a capability in a joint context and to ensure that all DOTMLPF and policy alternatives have been adequately considered. 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.

e. For ACAT II and below programs, ICDs are not required when the mission need is identified via the JCTD, qualified prototype projects, quick reaction technology projects, lessons learned, IPLs, joint IED defeat initiatives, or JUON processes. Mission-validated prototypes with formal MUA do not require an ICD.

f. Munitions used will be capable of resisting insensitive munitions (IM) threats (accidental and combat) per the established standardized IM protocols unless variations for unique circumstances are validated by the JROC.

2. ICD Focus. The ICD documents the CBA (described in Enclosure A) that describes one or more capability gaps and identifies potential non-materiel approaches and/or may recommend pursuing a materiel approach to addressing those gaps. The non-materiel approaches identified should cover the joint spectrum of possibilities. The result should not be a sponsor-stovepiped approach to a gap. The ICD supports the MDD; the follow-on AoA or other analysis, as required; update of the DOD Enterprise Architecture, development of the solution architecture; the Technology Development Strategy; and the Milestone (MS) A acquisition decision.

3. ICD Development and Documentation

a. For potential materiel approaches, the ICD guides the MDD, the Technology Development phase of the acquisition process and supports the MS A acquisition decision. The ICD also supports the development of joint DCRs or component DCRs to implement non-materiel solutions. When a materiel approach is required, the ICD will make a recommendation on the type of materiel approach preferred:

(1) development and fielding of information systems or enhancement of an existing system (or similar technologies with high obsolescence rates);

(2) evolution of existing capabilities with significant capability improvement (this may include replacing an existing system with a newer more capable system or recapitalization of the existing system); and

(3) breakout capabilities that differ significantly in form, function, operation, and capabilities from existing capabilities and offer significant

improvement over current capabilities or transform how we accomplish the mission.

This recommendation will be used by the MDA to scope the AoA.

b. The ICD sponsor will prepare the ICD in coordination and/or collaboration with the appropriate DOD components, agencies, FCB working groups, Office of **Cost Analysis & Program Evaluation (OCA&PE)** (when appropriate), and Office of the Under Secretary of Defense (Acquisition, Technology, & Logistics) (OUSD(AT&L)). The Director, Operational Test & Evaluation (DOT&E) will advise on the testability of chosen capability attributes and metrics so that the system's performance measured in operational testing can be linked to the CBA. The ICD will include a description of the capability, capability gap, threat, expected joint operational environments, shortcomings of existing systems, the capability attributes and metrics, 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 previous analyses updated as appropriate.

d. All draft and approved ICDs will 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.

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APPENDIX A TO ENCLOSURE F
INITIAL CAPABILITIES DOCUMENT FORMAT

CLASSIFICATION OR UNCLASSIFIED
INITIAL CAPABILITIES DOCUMENT
FOR
TITLE

Validation Authority: _____

Approval Authority: _____

Milestone Decision Authority: _____

Designation: JROC Interest/JCB Interest/Joint Integration/Joint
Information/Independent

Prepared for Materiel Development 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 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. Ideally, the body of the ICD should be no more than seven pages long.

1. Concept of Operations Summary. Describe the Concept, CONOPS, and/or Unified Command Plan (UCP)-assigned mission to which the capabilities identified in this ICD contribute; what operational outcomes they provide; what effects they must produce to achieve those outcomes; how they complement the integrated joint warfighting force; and what enabling capabilities are required to achieve the desired operational outcomes. If the ICD is not based on a previously approved CONOPS, the CONOPS will be included as an annex to the ICD.

2. Joint Capability Area. Cite the applicable joint capability areas (http://www.dtic.mil/futurejointwarfare/cap_areas.htm) and the range of military operations. **Identify the timeframe under consideration for initial operational capability based on input from the combatant commands and the acquisition community.** Also identify the relevant DPSs that apply to this ICD.

3. Required Capability. Describe the capabilities required as identified during the CBA. Explain why the required capabilities are essential to the joint force commander to achieve military objectives. Address the need for the capability to comply with applicable DOD, joint, national, and international policies and regulations. Identify the JCAs to which the capabilities identified in this ICD contribute directly. Define the capabilities using the common lexicon for capabilities established in the JCAs. Identify the relevant prioritized capability attributes as identified by the combatant commands through the SWarF process for battlespace awareness, command and control, logistics and net-centric capabilities.

4. Capability Gaps and Overlaps or Redundancies

a. Describe, in operational terms, the missions, tasks, and functions that cannot be performed or are unacceptably limited or when and how they will become unacceptably limited. Identify whether the capability gap is due to lack of proficiency in existing capability (cannot accomplish the mission to the level expected), or due to lack of sufficient capability (do not have enough of an effective capability), or the capability does not exist, or the capability needs to be replaced. Identify those capabilities for which there exist overlaps or redundancies. This discussion should also provide the linkage between the required capabilities and the Concept, CONOPS, or UCP assigned mission.

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 the combatant command validated list of prioritized capability attributes and their value to delivering the capability within the context of the CONOPS described earlier. For instance, if 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 is required. This prioritization should be based on the potential operational risk associated with the gaps. An exemplar schema for assessing risk is provided in Enclosure A, Figure A-3. This prioritization will help ensure critical operational shortfalls are addressed appropriately.

d. Provide a table (X.X) summarizing all capability gaps, relevant attributes, and associated metrics as shown below. Where appropriate use the combatant command prioritized list of capability attributes and associated metrics. Indicate the minimum value below which the capability will no longer be effective. Also indicate the priority of the capability gaps and which attributes are most important to the capability. This will be the basis for creating the

linkages between the capabilities and the systems during the development of subsequent CDDs and CPDs.

Table X.X. Example Capability Gap Table

Priority	Tier 1 & Tier 2 JCAs	Description	Metrics	Minimum value
		Capability 1		
		Attribute 1	Description	Value
		Attribute n	Description	Value
		Capability 2		
		Attribute 1	Description	Value
		Attribute n	Description	Value
		Capability n		
		Attribute 1	Description	Value
		Attribute n	Description	Value

e. For those capabilities where overlaps or redundancies exist, assess whether the overlap is operationally acceptable, or if excessive overmatch exists and the overlap should be evaluated as part of the tradeoffs to satisfy capability gaps.

f. Definitions of the identified capabilities should satisfy two rules:

(1) Rule 1. Capability definitions must contain the required operational attributes with appropriate qualitative 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.

g. The discussion above should capture the results of the CBA described in Enclosure A.

5. Threat and Operational Environment

a. Describe in general terms the operational environment, including joint operational environments, 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 (kinetic and non-kinetic) 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 the CBA. Contact the DIA Defense Warning Office, Acquisition Support Division for assistance:

- (1) DSN: 283-0788
- (2) SIPRNet: <http://www.dia/smil/mil/admin/di/dwo/dwo3.html>
- (3) JWICS: <http://www.dia.ic.gov/admin/di/dwo/dwo3.html>

6. 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 to mitigate part or all of the capability gaps, they should be summarized and included in the recommendations.

7. Final Recommendations. Describe the non-materiel approaches recommended for implementation through a joint or component DCR. Where the non-materiel changes were not sufficient to mitigate the gaps, and a materiel approach is required, make a recommendation on the type of materiel approach preferred for each capability gap: information system approach, evolutionary development of an existing capability, or a transformational approach.

Mandatory Appendices

Appendix A. Integrated Architecture Products. Include the required architecture framework view products developed from the DOD Enterprise Architecture identified in Table E-1, reference r.

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.

ENCLOSURE G

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 EMD phase of an acquisition program. Table G-1 lists the types of documents that precede or depend on the CDD. The DOD Enterprise Architecture, the solution architecture, the ICD, the AoA (unless waived by the MDA), the technology development strategy and the results of prototyping and preliminary design guide development of the CDD. The CDD captures the information necessary to deliver an affordable and supportable capability using mature technology within one or more increments 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. 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. If sufficient information (from the AoA and other analyses) is available to define the attributes and applicable KPPs for subsequent increments, the CDD may describe multiple increments for validation and approval. Updates to the CDD will be required if there are changes to the validated KPPs due to lessons learned from previous increments, changes in the JOpsC, CONOPS, or the DOD Enterprise Architecture and the solution architecture, 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 as directed by the MDA.

c. The CDD provides the operational performance attributes at a system level necessary for the acquisition community to design a proposed system(s) and establish a program baseline. The sponsor uses the results of the AoA and other analyses to identify the performance attributes, including KPPs and KSAs that will guide the development and demonstration of the proposed increment(s). Guidance for the development of KPPs is provided in Enclosure B. The performance attributes, KSAs and KPPs will apply only to the designated increment(s). If the plan requires a single step to deliver the full

capability, the KPPs and KSAs will apply to the entire system(s). Each increment must provide a safe, operationally effective, suitable, and useful capability in the intended mission environment that is commensurate with the investment and independent of any subsequent increment.

Table G-1. CDD Linkage to Program Documents

Predecessor Documents and Information	Dependent Documents
JOpsC and CONOPS	APB for Milestone B of the Current Increment
ICDs	Cost Analysis Requirements Description
Technology Development Strategy	Clinger-Cohen Confirmation (Updated for Milestone B for MAIS)
System Threat Assessment	Acquisition Strategy
AoA Report	Test and Evaluation Master Plan
DOD Enterprise Architecture and solution architecture	DD Form 1494 (Required to Obtain Spectrum Certification)
Complete Automated Standards Profile as Required in reference s	ISP
MUAs/final demonstration report for JCTD and qualified prototype projects	System Engineering Plan
	Manpower Estimate
	CPD

d. The CDD articulates the attributes that may be further refined in the CPD. It states the essential attributes of a system, including affordability and supportability, from the warfighter’s perspective. The CDD shall be updated or appended for each Milestone B decision except where the validated CDD specified multiple increments, revalidation is not required prior to each Milestone B unless there are changes to the validated KPPs.

e. The CDD addresses a single system or SoS only, although it may refer to any related systems needed in an FoS or an SoS approach necessary to provide the required capability. When the selected materiel approach consists of an FoS, each individual system will have its own CDD. An 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 an SoS. When the

CDD is being used to describe an 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 an 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 an unmanned aerial vehicle). 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. A CDD may also describe multiple increments of a program to deliver the required capabilities. The CDD will clearly describe the KPPs, KSAs, and other attributes, and their thresholds and objectives that apply to each increment.

f. When the sponsor of a JCTD, qualified prototype project, or quick-reaction technology project 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 JCTD, qualified prototype project, or quick-reaction technology project) will be used to support the development of the CDD. The CDD with the supporting MUA 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 performance attributes. Identification of the detailed performance attributes required for development of a capability is the responsibility of the PM.

h. Munitions used will be capable of resisting IM threats (accidental and combat) per the established standardized IM protocols unless variations for unique circumstances are validated by the JROC.

i. Information systems that are developed from a CDD will comply with a modified JCIDS process if their development costs will exceed \$15 million. The CDD will be developed describing the initial threshold KPPs for the capability with optional objectives. Once the CDD has been validated and approved, the requirements will be managed in accordance with the process described in Enclosure C.

2. CDD Focus. The CDD specifies the operational performance 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 (and KSAs supporting the sustainment KPP) are inserted verbatim into the APB. Metrics, criteria, and desired test and evaluation strategy outlined in 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(s) of a militarily useful capability that was demonstrated in an operationally relevant environment. The CDD will support entry into EMD and refinement of the DOD Enterprise Architecture and the solution architecture. In those cases where the preliminary design review will be held prior to MS B (and entry into EMD), the sponsor may develop a draft CDD approved by the sponsor to guide the prototyping and preliminary design activities.

b. The CDD sponsor will apply lessons learned during the Technology Development phase including prototyping and preliminary design, plus any other appropriate risk reduction activities, MUAs, JCTDs, qualified prototype projects, quick-reaction technology projects, 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 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 gaps. 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 the DOD Enterprise Architecture and solution architectures; US-ratified materiel international standardization agreements (reference ll); required capabilities; program support; sustainment; force structure; DOTMLPF and policy impacts and constraints; and schedule and program affordability for the system.

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

e. Draft and approved CDDs, both classified and unclassified, should be clearly 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 KSA and other non-KPP changes to a component. JROC approval of JROC Interest CDDs is required any time a recommendation is made to change a KPP unless otherwise delegated.

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

(3) The JROC may delegate all approval authority to include KPPs for information systems to an appropriate organization or body to allow for more flexibility and timeliness in meeting warfighter needs.

b. The JCB will review, validate, and approve JCB Interest CDDs. The JCB may retain complete approval authority over JCB Interest CDDs (i.e., no changes of any kind allowed without consent of the JCB) or may delegate part or all approval authority for KPP, KSA or other attribute changes to a component.

5. Certifications and Weapon Safety Endorsement. JROC Interest and JCB Interest CDDs will receive applicable intelligence 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. Joint Information and 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. All weapon-related CDDs will receive a weapon safety endorsement.

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 description and 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 changes to the KPPs, an appropriately revised 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 gaps identified in the source ICDs or other JROC validated source documents. 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 or other JROC-validated documents. 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 and consider technology maturity, fiscal constraints, and the timeframe when the capability is required. The CDD will contain all of the 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 re-evaluation 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 the attributes of the capabilities identified in the ICD. A NR-KPP will be a mandatory KPP in every increment for programs that exchange information (reference r). Force protection and survivability KPPs are mandatory for any manned system or system designed to enhance personnel survivability when the system may be employed in an asymmetric threat environment. A sustainment KPP is mandatory for all CDDs for ACAT I programs. System training and energy efficiency should be considered as KPPs if the analysis supports their inclusion. If the analysis does not support the need for these KPPs, the analysis will provide the justification. If the sponsor determines that any of the mandatory KPPs do not apply, the sponsor will provide justification in the CDD.

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

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APPENDIX A TO ENCLOSURE G
CAPABILITY DEVELOPMENT DOCUMENT FORMAT

CLASSIFICATION OR UNCLASSIFIED
CAPABILITY DEVELOPMENT DOCUMENT
FOR
TITLE

Increment: _____

ACAT: _____

Validation Authority: _____

Approval Authority: _____

Milestone Decision Authority: _____

Designation: JROC Interest/JCB Interest/Joint Integration/
Joint Information/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. 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. 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. Update the ICD description of the expected joint mission environments. Describe the system capability and how it relates to the capability defined in the ICD, CONOPS, and the DOD Enterprise Architecture, and the solution architecture. The capability must be defined using the common lexicon for capabilities established in the

JCAs and the SWarF prioritized capability attributes that apply. Discuss how the increment(s) defined in this CDD 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 an FoS or SoS solution, identify the source 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.
- d. Identify the JCAs (Tier 1 and 2) in which the capabilities being delivered through this CDD contribute to directly.

2. Analysis Summary. Summarize all analyses (i.e., AoA and/or other support analysis) conducted to determine the system attributes and to identify the KPPs. Include the alternatives, objective, 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 JOpsC, 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 along with any interdependencies between capabilities.

4. Threat Summary. Summarize the projected threat environment and the specific threat capabilities to be countered to ensure the capability gap can be mitigated. 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 (kinetic and non-kinetic) capability development efforts. Contact the DIA Defense Warning Office, Acquisition Support Division for assistance:

- a. DSN: 283-0788
- b. SIPRNet: <http://www.dia/smil/mil/admin/di/dwo/dwo3.html>
- c. JWICS: <http://www.dia.ic.gov/admin/di/dwo/dwo3.html>

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 an 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 JOpsC, CONOPS, or the DOD Enterprise Architecture and the solution architecture or other pertinent information. Identify known external dependencies and associated risks. In addition, provide an update on the acquisition status of previous increments. For information systems identify the organization or body that will provide oversight and management of the delivery of the capabilities.

6. System Capabilities Required for the Increment(s)

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 existing analytic references. When appropriate, the description should include any unique operating environments for the system. Provide any additional information that the PM should consider. If the CDD is describing an SoS solution, it must describe the attributes for the SoS level of performance and any unique attributes for each of the constituent systems. If the CDD is describing multiple increments, clearly identify which attributes apply to each increment.

b. Present each attribute in output-oriented, measurable and testable terms. For each attribute, provide a threshold and an objective value. When there are multiple increments and the threshold changes between increments, clearly identify the threshold for each increment. The PM 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, KSAs, and additional performance attributes in threshold/objective format, as depicted below. Correlate each KPP and KSA to the capability defined in the ICD and the Tier 1 and 2 JCAs to which they contribute directly. Also provide a general discussion of the additional performance attributes. (These tables can be captured in an appendix to the CDD.)

JCA Tier 1/2	Key Performance Parameter (attribute)	Development Threshold	Development Objective
	KPP 1	Value	Value
	KPP 2	Value	Value
	KPP 3	Value	Value

Table X.X. Example Key Performance Parameter Table

JCA Tier 1/2	Key System Attributes	Development Threshold	Development Objective
	KSA 1	Value	Value
	KSA 2	Value	Value
	KSA 3	Value	Value

Table X.X. Example Key System Attributes Table

Attribute	Development Threshold	Development Objective
Attribute	Value	Value
Attribute	Value	Value

Table X.X. Additional Attributes

d. For weapon programs, the required joint mission environment attributes and performance parameters must be addressed as the basis for the weapon safety endorsement. Identify, as specifically as possible, all projected requirements necessary to provide for safe weapon storage, handling, transportation, or use by joint forces throughout the weapon lifecycle, to include required performance and descriptive, qualitative, or quantitative attributes.

e. In accordance with the procedures described in references p, q, and r, develop the CDD NR-KPP from the integrated architecture. Force protection and survivability KPPs are mandatory for any manned system or system designed to enhance personnel survivability when the system may be employed in an asymmetric threat environment. A sustainment KPP is mandatory for all JROC Interest CDDs.

f. If the sponsor determines that any of the mandatory KPPs do not apply, the sponsor will provide justification.

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 ICD.

a. Discuss the relationship of the system described in this CDD to other systems contributing to the capability(ies). Discuss any overarching DOTMLPF and policy changes that 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 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, JCB Interest and Joint Integration ICDs, CDDs, and CPDs for applicability to the FoS or SoS addressed by this CDD. Also identify the primary JCAs (Tier1 & 2) supported by this CDD. If the CDD is not based on ICD validated capabilities, identify the JROC validated source document.

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

Capability	CDD Contribution	Related CDDs	Related CPDs	Tier1& 2 JCAs
ICD Capability Description #1 (Source Doc)	Brief description of the contribution made by this CDD	CDD Title	CPD Title	
ICD Capability Description #2 (Source Doc)	Brief description of the contribution made by this CDD	CDD Title	CPD Title	
Other JROC validated source document	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 q). Sponsor will identify the communities of interest (reference z) with which they are working to make the capability's data secure, 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 life cycle in accordance with the format and content prescribed by reference y. Contact J-2 Intelligence Requirements Certification Office (J2S/IRCO) for assistance:

- a. DSN 671-9539 or DSN 225-8085,
- b. SIPRNet <http://j2sid.js.smil.mil/IntelCertification/j2sid.html> or
- c. JWICS <http://164.185.180.14:8001/IntelCertification/j2sid.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 t. 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 (reference mm). 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. Specifically address safety issues regarding hazards of electromagnetic radiation to ordnance (HERO), fuels (HERF), and personnel (HERP).

11. Technology Readiness Assessment. Discuss the program's critical technology elements in accordance with the DOD Technology Readiness Assessment Deskbook (reference nn) (<https://acc.dau.mil/CommunityBrowser.aspx?id=18545>). Specifically identify any critical technology elements linked to the program's key performance parameters. Identify who performed the technology readiness assessment, when it was accomplished, whether an independent technology readiness assessment is planned, and, if applicable, when the DUSD(S&T) review of the program technology readiness assessment is planned.

12. 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.

13. 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 **based on discussions and coordination with the acquisition community**.

14. Other DOTMLPF and Policy Considerations. DOTMLPF and policy changes should be considered from two perspectives: 1) DOTMLPF that supports the implementation, operations and support of the specific system; 2) DOTMLPF that must be changed to support integration of this system with existing capabilities. 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 human systems integration (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 ESOH asset 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.

15. Other System Attributes.

a. 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. Address natural environmental factors (climatic design type, terrain, meteorological and oceanographic factors, impacts and effects); and unplanned stimuli (such as fast cook-off, slow cook-off, bullet impact, fragment impact, sympathetic detonation, and shape charge jet). 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 life cycle. 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 z and ll).

b. Address conventional and initial nuclear weapons effects; chemical, biological, radiological, and nuclear (CBRN) survivability in accordance with reference oo. If the system is covered under reference pp, nuclear survivability

must be designated a KPP. In the event the mission requires CBRN survivability, consider elevating this attribute to be a KPP.

16. Program Affordability. The affordability determination is made as part of the cost assessment in the analysis supporting the CDD development. Cost will be included in the CDD as life-cycle 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. Cite applicable cost analyses conducted to date. For information systems, identify the programmed funding by year for the software development and sustainment and for hardware refresh and integration. Provide rationale for the level of funding required.

Mandatory Appendices

Appendix A. Net-Ready KPP Products. Include the required architecture framework view products developed from integrated architectures identified in Table E-1, reference r. Formatting instructions are provided in reference s.

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.

ENCLOSURE H

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 critical design review and is validated and approved before the Milestone C acquisition decision. Because a CPD is finalized after critical design 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 DOD Enterprise Architecture and the solution architecture; applicable ICDs, the CDD; AoA and/or supporting analytical results; developmental and operational test results; and the critical design 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 H-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 at a system level necessary for the acquisition community to produce a single increment of a specific system. It presents performance attributes, including KPPs and KSAs, to guide the production and deployment of the current increment. If the plan requires a single step to deliver the full capability, the KPPs and KSAs 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 a safe, 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, KSAs 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 PM is expected to deliver for the increment based on the system design subsequent to the critical design review. The refinement of performance attributes, KSAs and KPPs is the most significant difference between the CDD and the CPD and is discussed further in paragraph 9 below.

Table H-1. CPD Linkage to Program Documents

Predecessor Documents and Information	Dependent Documents
JOpsC, CONOPS, and supporting operations concepts	Acquisition Strategy (updated for Milestone C)
Critical Design Review	APB for Milestone C of the current increment
System Threat Assessment	Clinger-Cohen Confirmation for MAIS (updated for Milestone C)
ISP (from Milestone B)	DD Form 1494 (required to obtain spectrum certification)
AoA Report	Test and Evaluation Master Plan (updated for Milestone C)
Completed automated standards profile as required in reference s	ISP (Updated for Milestone C)
ICDs	System engineering plan
CDD	Manpower estimate
DOD Enterprise Architecture and the solution architecture	
MUAs/final demonstration report for JCTDs and qualified prototype projects	

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 PM will develop details in the technical documentation.

e. When the sponsor of a JCTD, qualified prototype project, or quick-reaction technology project 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 MDA approval of production and fielding of the capability. The MUA, which is completed at the end of the JCTD, qualified prototype project, or quick reaction technology project, will be used to support the development of the CPD. The CPD with the supporting MUA will then be submitted for staffing and approval prior to the MDA Milestone C decision.

f. Each CPD applies to a single increment of a single system or SoS. When the CPD is part of an FoS approach, the CPD will identify the source ICD or other JROC-approved source document, 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.

g. Munitions used will be capable of resisting IM threats (accidental and combat) per the established standardized IM protocols unless variations for unique circumstances are validated by the JROC.

h. For information systems, a CPD will only be required when the MDA requires the CPD for a Milestone C decision (typically a major automated information system (MAIS) program). Final interoperability certification for those systems without a CPD will be accomplished through the ISP approval process (reference q).

i. A sponsor may resubmit a CDD to be revalidated as a CPD in those cases where the CDD accurately reflects the performance of the system to be delivered at low-rate initial production. The sponsor will resubmit the CDD as an FCB Draft CPD into KM/DS. The lead FCB will determine if the CDD requires staffing and/or recertification (Joint Staff J-2/J-6) prior to making a recommendation to the JCB/JROC.

2. CPD Focus. The CPD may refine and revise the required operational capabilities that were listed in the CDD. When a CPD is based on a JROC-approved source document other than an ICD or CDD, the KPPs, KSAs, and other performance attributes will be based on analysis of the required capability. CPD KPPs (and KSAs supporting the sustainment KPP) must be inserted verbatim into the performance section of the acquisition strategy and the APB. Metrics, criteria and desired test and evaluation strategy developed for the TEMP and refined during the EMD phase are updated as necessary to support Milestone C and initial operational test and evaluation. The metrics and criteria are based on validated performance criteria in the CPD.

3. CPD Development and Documentation

a. The CPD is finalized after completion of the critical design review. The CPD is an entrance criteria item that is necessary for each Milestone C acquisition decision.

b. The CPD sponsor will apply lessons learned during the EMD phase, lessons learned from previous increments, risk reduction activities, MUAs (for JCTDs, qualified prototype projects, and quick-reaction technology projects), 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, and FCB will prepare the CPD. Continuous collaboration with the systems acquisition PM 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 the DOD Enterprise Architecture and the solution architecture; 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 q. As required capabilities are developed, the output from the information needs discovery process (reference q) 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 and Weapon Safety Endorsement. JROC Interest and JCB Interest CPDs will receive applicable intelligence and IT and NSS interoperability and supportability certifications (in accordance with Enclosure C) prior to JROC/JCB validation and approval. Joint Integration CPDs also will receive the applicable certifications before they are returned to the sponsoring component for validation and approval. All weapon-related CPDs will receive a weapon safety endorsement.

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 will be made available or attached.

7. CPD Review and Approval. A CPD is written, validated, and approved to support the Milestone C decision for each increment. Unlike the CDD, the CPD is always specific to a single 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 critical design 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 PM, is specified by the expected production threshold and objective value 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 PM is expected to deliver for the increment based on the results of critical design review. In operational test, a system is required to demonstrate that it can satisfy all KPP and KSA thresholds listed in the CPD for this increment.

b. Each production threshold value may be adjusted, as required, to account for post-critical design review estimates and for manufacturing, technical, and other risks. KPP, KSA, and other performance attribute 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, KSA, 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 equal or better 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 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 will contain all of the KPPs that capture the attributes needed to achieve the required 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. 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 p, q, and r. Force protection and survivability KPPs are mandatory for any manned system or system designed to enhance personnel survivability when the system may be employed in an asymmetric threat environment. A sustainment KPP is mandatory for all CPDs supporting ACAT 1 programs if this KPP was present in the CDD. The Sustainment KPP will not be applied as a mandatory KPP in the CPD for MS C unless it was previously required in the CDD at MS B. Though a sustainment KPP is not mandatory for post MS B programs if the KPP was not present in the CDD, the sponsor must identify the associated metrics for the system based on expected performance of the system that will go into

production in the CPD. If the sponsor determines that any of the mandatory KPPs do not apply, the sponsor will provide justification in the CPD.

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

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APPENDIX A TO ENCLOSURE H
CAPABILITY PRODUCTION DOCUMENT FORMAT

CLASSIFICATION OR UNCLASSIFIED
CAPABILITY PRODUCTION DOCUMENT
FOR
TITLE

Increment: _____

ACAT: _____

Validation Authority: _____

Approval Authority: _____

Milestone Decision Authority: _____

Designation: JROC Interest/JCB Interest/Joint Integration/Joint
Information/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. 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. 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 capabilities identified in the ICD, CONOPS, and the DOD Enterprise Architecture and the solution architecture. Discuss how the current increment contributes to the required capability. The capability must be defined using the common lexicon for capabilities established in the JCAs and the SWarF prioritized capability attributes that apply.

- 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 an FoS or SoS solution, discuss the source 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.
- d. Identify the JCAs (Tier 1 and 2) in which the capabilities being delivered through this CPD contribute to directly.

2. Analysis Summary. Summarize all analyses (i.e., 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 JOpsC, 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 Defense Warning Office, Acquisition Support Division for assistance:

- a. DSN: 283-0788
- b. SIPRNet: <http://www.dia/smil/mil/admin/di/dwo/dwo3.html>
- c. JWICS: <http://www.dia.ic.gov/admin/di/dwo/dwo3.html>

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 an 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 PM can use this information to provide incentives for the production contractor to enhance performance through production improvements. If the threshold and objective values are the same, indicate this by including the statement “threshold = objective.”

c. Provide tables summarizing specified KPPs, KSAs and additional performance attributes in threshold-objective format, as depicted below. Correlate each KPP and KSA to the Tier 1 and 2 JCAs to which the KPPs and KSAs contribute directly. Also provide a general discussion of the additional performance attributes.

Tier 1 & 2 JCA	Key Performance Parameter (attribute)	Production Threshold	Production Objective
	KPP 1	Value	Value
	KPP 2	Value	Value
	KPP 3	Value	Value

Table X.X. Example Key Performance Parameter Table

Tier 1 & 2 JCA	Key System Attributes	Production Threshold	Production Objective
	KSA 1	Value	Value
	KSA 2	Value	Value
	KSA 3	Value	Value

Table X.X. Example Key System Attributes Table

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

Table X.X. Additional Attributes

d. For weapon programs, the joint mission environment attributes and performance parameters must be addressed as the basis for the weapon safety endorsement. Identify, as specifically as possible, all projected requirements necessary to provide for safe weapon storage, handling, transportation, or use by joint forces throughout the weapon life cycle, to include required performance and descriptive, qualitative, or quantitative attributes.

e. Develop the CPD NR-KPP, in accordance with the procedures described in references p, q, and r, from the DOD Enterprise Architecture and the solution architecture. Force protection and survivability KPPs are mandatory for any manned system or system designed to enhance personnel survivability when the system may be employed in an asymmetric threat environment. A sustainment KPP is mandatory for all JROC Interest CPDs when that KPP was present in the CDD.

f. If Sustainment was not identified as a KPP in the CDD, identify the associated sustainment/materiel availability metrics for the system based on expected performance of the system that will go into production.

g. If the sponsor determines that any of the mandatory KPPs do not apply, the sponsor will provide justification.

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.

a. Discuss the relationship of the system described in this CPD to other systems contributing to the capability(ies). 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. Also identify the primary JCAs (Tier 1 and 2) supported by this CPD. If the CPD is not based on ICD validated capabilities, identify the JROC validated source document.

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

Capability	CPD Contribution	Related CDDs	Related CPDs	Tier 1&2 JCA's
ICD Capability Description #1 (Source Doc)	Brief Description of the Contribution Made by this CPD	CDD Title	CPD Title	
ICD Capability Description #2 (Source Doc)	Brief Description of the Contribution Made by this CPD	CDD Title	CPD Title	
Other JROC validated source document	Brief Description of the Contribution Made by this CPD	CDD Title	CPD Title	

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 q). The sponsor will identify the communities of interest (reference z) 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 life cycle in accordance with the format and content prescribed by reference y. Contact J-2 Intelligence Requirements Certification Office (J2S/IRCO) for assistance:

- a. DSN 671-9539 or DSN 225-8085,
- b. SIPRNet <http://j2sid.js.smil.mil/IntelCertification/j2sid.html> or
- c. JWICS <http://164.185.180.14:8001/IntelCertification/j2sid.html>.

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

such as electromagnetic pulse (reference mm). 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. Specifically address safety issues regarding HERO, HERF, and HERP.

11. Technology and Manufacturing Readiness Assessment. Discuss the program's critical technology elements in accordance with the DOD Technology Readiness Assessment Deskbook.

(<https://acc.dau.mil/CommunityBrowser.aspx?id=18545>)

a. Specifically identify any critical technology elements linked to the program's key performance parameters. Identify who performed the technology readiness assessment, when it was accomplished, whether an independent technology readiness assessment is planned, and, if applicable, when the DUSD(S&T) review of the program technology readiness assessment is planned.

b. Specifically identify any manufacturing readiness challenges linked to the program's key performance parameters. Identify who performed the manufacturing readiness assessment, when it was accomplished, whether an independent manufacturing readiness assessment is planned, and, if applicable, when the DUSD(S&T) review of the program manufacturing readiness assessment is planned.

12. 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.

13. 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 **based on discussions and coordination with the acquisition community**.

14. Other DOTMLPF and Policy Considerations. DOTMLPF and policy changes should be considered from two perspectives: 1) DOTMLPF that supports the implementation, operations and support of the specific system; 2) DOTMLPF that must be changed to support integration of this system with existing capabilities. 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 asset 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.

15. Other System Attributes.

a. As appropriate, address attributes that tend to be design, cost, and risk drivers, including ESOH, HSI, embedded instrumentation, EA, information protection standards and IA and WARM requirements. In addition, address natural environmental factors (such as climatic, terrain, and oceanographic factors); and unplanned stimuli (such as fast cook-off, slow cook-off, bullet impact, fragment impact, sympathetic detonation, and shape charge jet). 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 life cycle. Include data accuracy and forecast needs. For 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 z and ll).

b. Address conventional and initial nuclear weapons effects; CBRN survivability in accordance with reference oo. If the system is covered under reference pp, nuclear survivability must be designated a KPP. In the event the mission requires CBRN survivability, consider elevating this attribute to be a KPP.

16. Program Affordability. The affordability determination is made as part of the cost assessment in the CBA. 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. Cite applicable cost analyses conducted to date.

Mandatory Appendices

Appendix A. Net-Ready KPP Products. Include the required architecture framework view products developed from integrated architectures identified in Table E-1, reference r. Formatting instructions are provided in reference s.

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.

ENCLOSURE I

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) to meet an established operational need.

c. Joint DCRs may be submitted to:

(1) Change, institutionalize, or introduce new joint DOTMLPF and policy resulting as an output of joint experimentation, lessons learned, or other assessments to meet operational needs.

(2) Change, institutionalize, or introduce new joint DOTMLPF and policy resulting from the CBA but outside the scope or oversight of a new defense acquisition program.

(3) Request additional numbers of existing commercial or non-development items previously produced or deployed in addition to other considerations of DOTMLPF.

(4) Introduce existing non-materiel solutions available from other DOD, US interagency, or foreign sources.

d. 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) A CBA; or

(5) Combatant commanders' and Service Chiefs' 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 (reference ee).

(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 staffing (military, civilian, and contractor support) required to operate, sustain, and reconstitute joint warfighting capabilities.

(3) Joint Training. Training, including mission rehearsals, of individuals, units, and staffs using joint doctrine or joint tactics, techniques, and procedures to prepare joint forces or joint staffs to respond to strategic, operational, or tactical requirements considered necessary by the combatant commanders to execute their assigned or anticipated missions.

(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.

(5) Joint Leadership and Education. Professional development of the joint leader 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.

(8) Joint Policy. Any DOD, interagency or international policy issues that may prevent effective implementation of changes in the other DOTMLPF areas.

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 G/FO-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 DCR 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. G/FO Review, FCB, and FPO Assessment

(1) Joint Staff/J-8 RMD 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) FPOs will provide an assessment of their specific functional process during their review of proposed joint DCRs during document staffing.

b. JROC Briefing and Schedule. Briefings for the FCB, JCB, and JROC will be prepared in accordance with the JROC Administrative Guide (http://www.intelink.sgov.gov/wiki/Joint_Requirements_Oversight_Council_Admin_Guide).

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 KM/DS. KM/DS will be used to track all actions associated with the implementation of joint DCRs and their current status. A review will be scheduled with the JCB as necessary to review the status of outstanding joint DCRs. Serves as the executive oversight committee for joint DCR 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 Joint Staff Director, 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 FCBs share in the implementation of an approved recommendation. In cases where the JROC appoints a sponsor, the FCBs and DJ-8 would support this sponsor in its effort to co-evolve the joint DCRs. The DJ-8, the respective FCBs, 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, with the support of the FCBs, 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, with the support of the FCBs, also makes recommendations to the JCB for modifications to existing timelines based on the synchronization of tasks. The FCBs 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 charts and oversees the work of FCBs in developing overarching joint operational and integrating concepts for the joint missions 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) Functional Capability Boards. The FCBs are responsible for the management of joint DCRs, and or the implementation of the JROC approved JROCM DCR actions. They will coordinate with the Services, combatant commands, and agencies to effectively adjudicate DCR tasks.

(e) 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 I-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 I-1. Joint Staff DOTMLPF FPOs

(e) DOTMLPF Action Review. As required, DOTMLPF actions will be conducted at the JCB. CSAs 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. As required, updates will be provided to the J-8/DDR, Service G/FO representatives, the USJFCOM G/FO representative and FCBs. The purpose is to inform the J-8/DDR of ongoing joint DOTMLPF activities and provide 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.

(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. Joint Staff Director, 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 comments for the JROC of the “P” functional process during their review of proposed joint DCRs. Supports the J-8 in the evaluation of proposed joint manpower changes.

b. Joint Staff Director, J-4. Acts as the joint DOTMLPF FPO for the implementation of the joint DOTMLPF critical consideration joint facilities (“F”). Supports the JROC and the DJ-8 in executing their integration and implementation responsibilities. Provides comments for the JROC of the “F” functional process during their review of proposed joint DCRs.

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

d. Joint Staff Director, 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 comments for the JROC of “D,” “T” and “L” functional processes during their review of proposed joint DCRs.

e. Joint Staff, Director, J-8

(1) Sponsors DOTMLPF action reviews at the JCB as needed.

(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 FCBs and 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 DOD.

(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 comments for the JROC of the “M” and “O” functional process during their review of proposed joint DCRs.

(7) The J-8/DDFP will provide a safe weapons endorsement for weapons-related DCRs to ensure that safety attributes are understood in applying an existing weapon to a potentially new use or environment.

f. Joint Staff Roles and Responsibilities of Joint DOTMLPF FPOs

(1) Provide comments for the JROC of their specific functional process during the review of proposed joint DCRs.

(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) Support 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.

(6) Provide an endorsement recommendation to the JROC.

(7) Responsible for coordination with the action officer and lead agency to ensure all DCR actions are adjudicated by the established suspense date. However, if an extension to the suspense date is required, please submit the package to the JROC Secretariat not later than 60 days prior to the action suspense date. Please annotate your proposed way ahead and/or updates in the notes section of the KM/DS DCR module.

h. Roles and Responsibilities of Combatant Commands

(1) Participate in joint DOTMLPF implementation process.

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

(3) (USJFCOM) Submit the necessary joint DCR package 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 joint DOTMLPF implementation process.

(3) Fund all actions as directed in the JROC approval of the DCR.

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

k. Roles and Responsibilities of Office of the Secretary of Defense. Participate in 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.

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APPENDIX A TO ENCLOSURE I

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.

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 qq) 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 requirement 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 and/or implications on the safe use of the proposed solution in the proposed operating environment.

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) 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).

d. Identify which Tier 1 and Tier 2 JCAs are supported by this DCR.

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 a discussion of improvement and/or benefit to joint warfighting and joint interoperability.

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).

(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 (research, development, test & evaluation (RDT&E), operations & maintenance (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
<i>Resources (\$K)</i>							
<i>O&M</i>							
<i>RDT&E</i>							
<i>Procurement</i>							
<i>Manpower</i>							
Total Funding							

Figure I-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 staffing 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 sources 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 recommendations, 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 DCRs 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.

ENCLOSURE J

REFERENCES

- a. CJCSI 3170.01 Series, “Joint Capabilities Integration and Development System”
- b. DODI 5000.02, 2 December 2008, “Operation of the Defense Acquisition System”
- c. JROCM 261-06, 20 Dec 06, “Cost, Performance and Interdependency Chart Implementing Directive.”
- d. JROCM 074-07, 29 Mar 2007, “System Training as a Selective Key Performance Parameter Process Action Plan.”
- e. JROCM 008-08, 14 Jan 2008, “Leveraging Technology Evolution for Information Technology Systems”
- f. JROCM 130-08, 20 Jun 2008, “Assignment of Joint Potential Designators and Coordination by Combatant Commands on Capabilities Documents.”
- g. CJCSI 3010.02 series, “Joint Operations Concepts Development Process (JOPSC-DP)”
- h. DODI 8260.2, 21 January 2003, “Implementation of Data Collection, Development, and Management for Strategic Analyses”
- i. “White Paper on Conducting a Capabilities-Based Assessment (CBA) Under the Joint Capabilities Integration and Development System (JCIDS),” JCS J-8/Force Application Assessment Division, January 2008
- j. “Joint Capabilities Integration and Development Systems (JCIDS) Analysis Code of Best Practice (COBP),” TRAC-TD-05-012, June 2005
- k. “Analysis Handbook: A Guide for Performing Analysis Studies for Analyses of Alternatives or Functional Solution Analyses,” Office of Aerospace Studies, Air Force Materiel Command, July 2008
- l. DODD 2000.19E, 14 February, 2006, “Joint Improvised Explosive Device Defeat Organization”
- m. CJCSI 3470.01 Series, “Rapid Validation and Resourcing of Joint Urgent Operational Needs (JUONS) in the Year of Execution”
- n. Ronald Reagan National Defense Authorization Act 2005 (PL 108-375), Section 141

- o. "Department of Defense Reliability, Availability, Maintainability and Cost Rationale Report Manual", 1 June 2009
- p. DODD 4630.5, 5 May 2004, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)"
- q. DODI 4630.8, 30 June 2004, "Procedures for Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)"
- r. CJCSI 6212.01 series, "Interoperability and Supportability of Information Technology and National Security Systems"
- s. "DOD Architecture Framework, Version 1.5," 23 April 2007
- t. DODD 4650.1, 8 June 2004, "Policy for the Management and Use of the Electromagnetic Spectrum"
- u. DODD 8100.1, 19 September 2002, "Global Information Grid (GIG) Overarching Policy"
- v. Joint Publication 3-0, 13 February 2008, "Joint Operations"
- w. DODD 1322.18, 3 September 2004, "Military Training"
- x. DOD 5200.1-PH, April 1997, "DOD Guide to Marking Classified Documents"
- y. CJCSI 3312.01 Series, "Joint Military Intelligence Requirements Certification"
- z. DODD 8320.2, 2 December 2004, "Data Sharing in a Net-Centric Department of Defense"
- aa. CJCSI 3137.01 Series, "Functional Capabilities Board Process"
- bb. CJCSI 1001.01 Series, "Joint Manpower and Personnel Program"
- cc. CJCSI 1301.01 Series, "Policies and Procedures to Assign Individuals to Meet Combatant Command Mission-Related Temporary Duty Requirements"
- dd. CJCSI 6721.01 Series, "Global Command and Control Management Structure"
- ee. CJCSI 5120.02 Series, "Joint Doctrine Development System"
- ff. CJCSI 3500.01 Series, "Joint Training Policy for the Armed Forces of the United States"
- gg. CJCSI 3500.02 Series, "Joint Training Master Plan 2002 for the Armed Forces of the United States"
- hh. CJCSI 1800.01 Series, "Officer Professional Military Education Policy"

- ii. CJCSI 3460.01 Series, “Combat Support Agency Review Team Assessments”
- jj. JROCM 102-05, 20 May 2005, “Safe Weapons in Joint Warfighting Environments”
- kk. Title 10, United States Code, section 167
- ll. DODD 2010.6, 10 November 2004, “Materiel Interoperability with Allies and Coalition Partners”
- mm. DODD 3222.3, 8 September 2004, “DoD Electromagnetic Environmental Effects (E3) Program”
- nn. “Technology Readiness Assessment Deskbook”, September 2003
- oo. DODI 3150.09, 17 September 2008, “The Chemical, Biological, Radiological, Nuclear (CBRN) Survivability Policy”
- pp. DODD S-5210.81, 18 August 2005, “United States Nuclear Weapons Command and Control, Safety, and Security (U)”
- qq. CJCSM 3500.04 Series, “Universal Joint Task List (UJTL)”
- rr. “Capstone Concept for Joint Operations,” Version 3.0, 15 January 2009
- ss. DODD 5000.01, 20 November 2007, “The Defense Acquisition System”

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GLOSSARY

PART I – ACRONYMS

ACAT	acquisition category
AoA	analysis of alternatives
APB	acquisition program baseline
ASD(NII)/CIO	Assistant Secretary of Defense (Networks and Information Integration)/Chief Information Officer
AT&L	acquisition, technology and logistics
BTA	Business Transformation Agency
CAD	Capabilities and Acquisition Division (Joint Staff/J-8)
CAIG	Cost Analysis Improvement Group
CAIV	cost as an independent variable
CBA	capabilities-based assessment
CBRN	chemical, biological, radiological, and nuclear
CCJO	Capstone Concept for Joint Operations
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
COI	community of interest
CONOPS	concept of operations
CONPLAN	concept plan
COTS	commercial off the shelf
CPD	capability production document
CSA	combat support agency
DBSMC	Defense Business Systems Management Committee
DCR	doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) change recommendation
DDFP	Deputy Director for Force Protection
DDR	Deputy Director for Requirements
DIA	Defense Intelligence Agency
DISA	Defense Information Systems Agency
DJ-1	Joint Staff Director, J-1 (Manpower and Personnel Directorate)

DJ-5	Joint Staff Director, J-5 (Strategic Plans and Policy Directorate)
DJ-7	Joint Staff Director, J-7 (Operational Plans and Joint Force Development Directorate)
DJ-8	Joint Staff Director, J-8 (Force Structure, Resources, and Assessment Directorate)
DNI/IRB	Director, National Intelligence/Intelligence Resources Board
DOD	Department of Defense
DODD	Department of Defense directive
DODI	Department of Defense instruction
DOT&E	Director, Operational Test and Evaluation
DOTMLPF	doctrine, organization, training, materiel, leadership and education, personnel, and facilities
DPS	Defense Planning Scenarios
E3	electromagnetic environmental effects
EA	executive agent
EA	electronic attack
EMD	engineering and manufacturing development
ESOH	environment, safety, and occupational health
FCB	Functional Capabilities Board
FOC	full operational capability
FoS	family of systems
FPO	functional process owner
FUE	first unit equipped
G/FO	general/flag officer
GCC	Global Command and Control
GIG	Global Information Grid
HERF	hazards of electromagnetic radiation to fuels
HERO	hazards of electromagnetic radiation to ordnance
HERP	hazards of electromagnetic radiation to personnel
HSI	human systems integration
IA	information assurance
ICD	initial capabilities document
IED	improvised explosive device
IM	insensitive munition
IOC	initial operational capability
IPL	Integrated Priority List
IRCO	Intelligence Requirements Certification Office
ISP	Information Support Plan
ISR	intelligence, surveillance, and reconnaissance

IT	information technology
ITEA	Initial Threat Environment Assessment
J-8	Force Structure, Resources, and Assessment Directorate, Joint Staff
JCA	joint capability area
JCB	Joint Capabilities Board
JCD&E	Joint Concept Development and Experimentation
JCIDS	Joint Capabilities Integration and Development System
JCTD	Joint Capability Technology Demonstration
JIC	Joint Integrating Concept
JIEDDO	Joint Improvised Explosive Device Defeat Organization
JOC	Joint Operating Concept
JOpsC	Joint Operations Concepts
JPD	joint potential designator
JROC	Joint Requirements Oversight Council
JROCM	Joint Requirements Oversight Council memorandum
JUON	joint urgent operational need
JWSTAP	Joint Weapon Safety Technical Advisory Panel
KM/DS	Knowledge Management/Decision Support
KPP	key performance parameter
KSA	key system attribute
MAIS	Major Automated Information System
MCEB	Military Communications Electronics Board
MDA	milestone decision authority
MDAP	major defense acquisition program
MDD	materiel development decision
MSA	materiel solution analysis
MTBF	mean time between failure
MUA	military utility assessment
MXD	Maintenance Division
NDS	National Defense Strategy
NGA	National Geospatial-Intelligence Agency
NGB	National Guard Bureau
NMS	National Military Strategy
NR-KPP	net-ready key performance parameter
NRO	National Reconnaissance Office
NSA	National Security Agency
NSS	National Security Strategy
NSS	national security system
O&M	operations and maintenance
O&S	operations and support

OCA&PE	Office of Cost Analysis and Program Evaluation
OPLAN	operation plan
OSD	Office of the Secretary of Defense
OUSD(AT&L)	Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics
PLCCE	program life cycle cost estimate
PM	program manager
PSA	principal staff assistant
RAM	reliability, availability, and maintainability
RMD	Requirements Management Division
RDT&E	research, development, test, and evaluation
SoS	system of systems
ST	system training
SWarF	Senior Warfighters' Forum
TEMP	Test and Evaluation Master Plan
UCP	Unified Command Plan
UJTL	Universal Joint Task List
USecAF	Under Secretary of the Air Force
USD(AT&L)	Under Secretary of Defense (Acquisition, Technology, and Logistics)
USD(C)	Under Secretary of Defense (Comptroller)
USD(I)	Under Secretary of Defense (Intelligence)
USD(P&R)	Under Secretary of Defense (Personnel & Readiness)
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 ACAT determines the level of review, validation 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.

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.

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 JCIDS process.

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.

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

capability - The ability to achieve a desired effect under specified standards and conditions through combinations of means and ways across the doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) to perform a set of tasks to execute a specified course of action. It is defined by an operational user and expressed in broad operational

terms in the format of an initial capabilities document or a joint DOTMLPF change recommendation. In the case of materiel proposals/documents, the definition will progressively evolve to DOTMLPF performance attributes identified in the capability development document and the capability production document.

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

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

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

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

Capstone Concept for Joint Operations (CCJO) - The CCJO describes in broad terms my vision for how the joint force circa 2016-2028 will operate in response to a wide variety of security challenges. It proposes that future joint force commanders will combine and subsequently adapt some combination of four basic categories of military activity—combat, security, engagement, and relief and reconstruction—in accordance with the unique requirements of each operational situation. The concept is informed by current strategic guidance, but because it looks to the future, it is intended to be adaptable, as it must be, to changes in that guidance. (reference rr).

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

concept of operations (CONOPS) - A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The CONOPS frequently is embodied in campaign plans

and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose. Also called a commander's concept.

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.

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

Defense Business Systems Management Committee (DBSMC) – The DBSMC is responsible for coordination of defense business system modernization initiatives, as codified in Title 10, Section 186.

Director, National Intelligence/Intelligence Resources Board (DNI/IRB) - The DNI/IRB 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 and provides advice and counsel on future requirements funded outside that body.

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

DOD component - 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 DOD, the Defense agencies, DOD field activities, and all other organizational entities within the DOD.

DOD Enterprise Architecture – A federation of descriptions that provide context and rules for accomplishing the mission of the Department. These descriptions are developed and maintained at the Department, Capability area, and Component levels and collectively define: a) the people, processes, and technology required in the “current” and “target” environments, and b) the roadmap for transition to the target environment.

electromagnetic environmental effects (E3) - The impact of the electromagnetic environment upon the operational capability of military forces, equipment, systems, and platforms. It encompasses all electromagnetic disciplines, including electromagnetic compatibility and electromagnetic interferences; electromagnetic vulnerability; electromagnetic pulse, electronic protection, hazards of electromagnetic radiation to personnel, ordnance and volatile materials, and natural phenomena effects of lightning and precipitation static.

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.

embedded training - Training accomplished through the use of the trainee's operational system within a live virtual constructive (LVC) training environment.

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

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

environment, safety and occupational health (ESOH) assets - The workforce and natural infrastructure. A subset of the installation assets necessary to support operational capability over perpetual useful life.

environment, safety and occupational health (ESOH) management - Sustaining the readiness of the US Armed Forces by cost effectively managing all installation assets through promotion of safety, protection of human health, and protection and restoration of the environment.

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

functional process owner (FPO) – Joint Staff directorates that have the responsibility for the 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

Gatekeeper - That individual who makes the initial joint potential designation of Joint Capabilities Integration and Development System (JCIDS) documents. This individual will also make a determination of the lead and supporting Functional Capabilities Boards (FCBs) for capability documents. The Gatekeeper is supported in these functions by the FCB working group leads and the Joint Staff/J-6. The Joint Staff Deputy Director for Requirements, J-8, serves as the Gatekeeper.

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 unknown. Technology is

developed to a desired 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 system - 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 and includes computers and computer networks, ancillary equipment, software, firmware and related procedures, services (including support services), and related resources. Notwithstanding the above, the term information system does not include any equipment that is acquired by a federal contractor incidental to a federal contract. Information system is used synonymously with information technology (to include National Security Systems).

initial capabilities document (ICD) - Summarizes the CBA and recommends materiel or non-materiel approaches or approaches that are a combination of materiel and non-materiel to satisfy specific capability gaps. It defines the capability gap(s) in terms of the functional area, the relevant range of military operations, desired effects, time, and DOTMLPF and policy implications and constraints. The ICD summarizes the results of the DOTMLPF analysis and the DOTMLPF approaches (materiel and non-materiel) that may deliver the required capability. The outcome of an ICD could be one or more joint DOTMLPF change recommendations or capability development documents.

interoperability - The ability of U.S. and coalition partner 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 capability area (JCA) - Collections of like DOD capabilities functionally grouped to support capability analysis, strategy development, investment decision making, capability portfolio management, and capabilities-based force development and operational planning.

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 (JCIDS) and joint DOTMLPF change recommendation documents prior to their submission to the JROC. The JCB is chaired by the Joint Staff Director of Force Structure, Resources and Assessment (J-8). It is comprised of general and flag officer representatives of the Services.

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

joint 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.

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 staffing (military, civilian and contractor support) required to operate, sustain and reconstitute joint warfighting capabilities.

c. joint training - Training, including mission rehearsals, of individuals, units, and staffs using joint doctrine or joint tactics, techniques, and procedures to prepare joint forces or joint staffs to respond to strategic, operational, or tactical requirements considered necessary by the combatant commanders to execute their assigned or anticipated missions.

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.

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 mission environment - A subset of the joint operational environment composed of force and non-force entities; conditions, circumstances and influences within which forces employ capabilities to execute joint tasks to meet a specific mission objective.

joint operational environment - The environment of land, sea, and/or airspace within which a joint force commander employs capabilities to execute assigned missions.

Joint Operations Concepts (JOpsC) – JOpsC is a family of joint future concepts consisting of a Capstone Concept for Joint Operations, Joint Operating

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

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

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

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

c. “Joint Integration” designation will apply to ACAT II and below programs where the capabilities and/or systems associated with the document do not significantly affect the joint force and an expanded joint review is not required. Staffing is required for applicable certifications (information technology and National Security Systems (NSS) interoperability and supportability and/or intelligence), and for a weapon safety endorsement, when appropriate. Once the required certification(s)/weapon safety endorsement are completed, the document may be reviewed by the FCB. Joint Integration documents are validated and approved by the sponsoring component.

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

e. “Independent” designation will apply to ACAT II and below programs where the capabilities and/or systems associated with the document do not significantly affect the joint force, an expanded review is not required, and no certifications or endorsements are required. Once designated Independent, the FCB may review the document. Independent documents are validated and approved by the sponsoring component.

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

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

Joint Weapon Safety Technical Advisory Panel (JWSTAP) – The JWSTAP provides subject matter expertise review and constructive comments to the Deputy Director for Force Protection (DDFP) regarding the safe employment, storage, and transport of munitions and weapons in joint operating environments. Pre-existing requirement or capability documents are not within the scope of the JWSTAP. The JWSTAP review is focused on the capability attributes and metrics of a given weapon to identify potential safety issues resulting from interaction between the proposed weapon and other capabilities existing within the same joint operating environment. Safety concerns identified by the JWSTAP are presented to the DDFP with recommended revisions to the capability document to reduce or eliminate the identified safety concern while maintaining the desired operational effectiveness.

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

key performance parameters (KPP) - Those attributes of a system that are considered critical or essential to the development of an effective military capability. KPPs must be measurable and testable to enable feedback from test and evaluation efforts to the requirements process. KPPs are validated by the Joint Requirements Oversight Council (JROC) for JROC Interest documents, by the Joint Capabilities Board for JCB Interest documents, and by the DOD component for Joint Integration, Joint Information, or Independent documents. Capability development and capability production document KPPs are included verbatim in the acquisition program baseline.

key system attribute (KSA) - An attribute or characteristic considered crucial to achieving a balanced solution/approach to a system, but not critical enough to be designated a KPP. KSAs provide decision makers with an additional level of capability performance characteristics below the KPP level and require a sponsor 4-star, Defense agency commander, or Principal Staff Assistant to change.

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 continental US-based and worldwide-deployed forces.

materiel availability - a measure of the percentage of the total inventory of a system operationally capable (ready for tasking) of performing an assigned mission at a given time, based on materiel condition.

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.

milestones - Major decision points that separate the phases of an acquisition program.

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

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.

National Security Systems - Telecommunications and information systems, operated by the DOD, 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).

negative training - A process in which knowledge, skills and/or attitude are changed in such a way that when presented with the real task the student, if following what they have been taught, would carry out the process incorrectly or, in the worst case, dangerously.

net-centric - Relating to or representing the attributes of a net-centric environment. A net-centric environment 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. A net-centric environment enables substantially improved military situational awareness and significantly shortened decision-making cycles.

net-ready key performance parameter (NR-KPP) - The NR-KPP states a system's information needs, information timeliness, information assurance, and net-ready attributes required for both the technical exchange of information and the operational effectiveness of that exchange. The NR-KPP consists of information required to evaluate the timely, accurate, and complete exchange and use of information to satisfy information needs for a given capability. The NR-KP is composed of the following elements:

- 1) supporting integrated architecture products, including the Joint Common Systems Function List required to assess information exchange and operationally effective use for a given capability,
- 2) compliance with DOD Net-centric Data and Services strategies, including data and services exposure criteria,
- 3) compliant with applicable GIG Technical Direction to include DISR mandated IT Standards reflected in the TV-1 and implementation guidance of GIG Enterprise Service Profiles necessary to met all operational requirements specified in the integrated architecture system/service views,
- 4) verification of compliance with DOD information assurance requirements, and
- 5) compliance with supportability elements to include: spectrum analysis, selective availability anti-spoofing module, and the Joint Tactical Radio System.

nondevelopmental item - Any previously developed item used exclusively for governmental purposes by a federal agency, a state or local government, or a foreign government with which the United States has a mutual defense cooperation agreement.

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. The acquisition of the materiel portion must comply with all acquisition policies (reference b).

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.

occupational health - Activities directed toward anticipation, recognition, evaluation, and control of potential occupational and environmental health hazards; preventing injuries and illness of personnel during operations; and accomplishment of mission at acceptable levels of risk.

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 availability - a measure of the percentage of time that a system or group of systems within a unit are operationally capable of performing an assigned mission at a given time, based on materiel condition.

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

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

ownership cost - the operations and support (O&S) costs associated with Availability.

qualified prototype project - A unique materiel system developed for demonstration under field conditions to confirm adequacy as a solution for a validated mission gap. To be a qualified project, a prototype must have Joint Capabilities Integration and Development System validation of mission gap and include an independent military utility assessment and/or final report including those relevant elements of an initial capabilities document.

quick reaction technology project - A research project transitioning products directly into demonstrations under field conditions and intended for immediate warfighting end users. To be a qualified project, a prototype must have Joint Capabilities Integration and Development System validation of mission gap and include an independent military utility assessment and/or final report including those relevant elements of an initial capabilities document.

reliability - a measure of the probability that a system will perform without failure over a specific interval.

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

safety - The programs, risk management activities, and organizational and cultural values dedicated to preventing injuries and accidental loss of human and materiel resources and to protecting the environment from the damaging effects of DOD mishaps.

Senior Warfighters' Forum (SWarF) - The SWarF is a mechanism by which a combatant commander can engage with his senior warfighting counterparts to identify the issues and capabilities associated with a particular mission or function of one or more combatant commands. The scope of a SWarF is defined by the combatant commander leading the effort.

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

solution architecture - The fundamental organization of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution.

standard - Quantitative or qualitative measures for specifying the levels of performance of a task.

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, infrastructure assets, materiel, and consumables necessary to support military effort.

sustainment - The provision of personnel, training, logistic, environment, safety and occupational health management, and other support required to maintain availability of materiel and support 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 system of systems is "a set or arrangement of systems that results when independent and useful systems are integrated into a larger system that delivers unique capabilities

system training - All training methodologies (embedded, institutional, Mobile Training Team, computer, and Web-based) that can be used to train and

educate operator and maintainer personnel in the proper technical employment and repair of the equipment and components of a system and to educate and train the commanders and staffs in the doctrinal tactics, techniques, and procedures for employing the system in operations and missions.

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 and Defense agencies 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. In his role as Chairman of the Joint Requirements Oversight Council (JROC), the Vice Chairman of the Joint Chiefs of Staff is the validation authority for all potential major defense acquisition programs. The validation authority for Joint Capabilities Integration and Development System documents is dependent upon the joint potential designator of the program or initiative as specified below:

- a. JROC Interest - JROC
- b. JCB Interest - JCB
- c. Joint Integration - Sponsor
- d. Joint Information - Sponsor
- e. Independent – Sponsor

weapon – Military munitions, directed energy weapons, electromagnetic rail guns together with firing, launching, and controlling systems including safety critical software. Nuclear weapons and their components; small arms, and associated ammunition (.50 caliber or 8 gauge or smaller); intercontinental ballistic missiles, space launch vehicles, and the non-weapon related aspects of vehicles or platforms from which military munitions or directed energy weapons are fired or launched are excluded.

weapon safety endorsement – Endorsement is the means for documenting, in support of the Joint Capabilities Integration and Development System process, the extent to which weapon capabilities documents provide for safe integration into joint operating environments. Endorsement recommendations will be prepared by the Joint Weapon Safety Technical Advisory Panel and submitted to the J-8/Deputy Director for Force Protection for appropriate staffing and endorsement by the Protection Functional Capabilities Board.

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