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ACQUISITION REFORM PANEL**

**STATEMENT OF**

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**BEFORE THE**

**HOUSE ARMED SERVICES COMMITTEE**

**ACQUISITION REFORM PANEL**

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## **Measuring Value and Efficiency: How to Assess the Performance of the Defense Acquisition System**

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**(Acquisition, Technology, and Logistics)**

Good morning Chairman Andrews, Congressman Conaway, and Members of the Panel. Thank you for the opportunity to appear before you today to discuss how the Department of Defense assesses the performance of the Defense Acquisition System.

Any attempt to measure the return on the taxpayer's dollar that we are achieving in the acquisition system must be viewed from both strategic and tactical perspectives. In doing so, we must be prepared to answer a number of questions. For example:

- a. Has the Department made the optimal investment decisions when deciding what weapon system programs to develop and field?
- b. Has the Joint Staff established appropriate requirements through the Joint Capabilities Integration and Development System (JCIDS)?
- c. Has the Department fully funded its weapons systems at initiation through the Planning, Programming, Budgeting, and Execution System (PPBES)?
- d. Has the Department, using DoD Instruction 5000.2 which guides the acquisition process itself, ensured that new programs have a solid foundation in terms of technology maturity, cost estimates, systems engineering processes, etc., at the time they are initiated?

e. Is the acquisition community disciplined in its execution of our programs, taking prudent steps to control requirements changes that might drive up cost or delay schedules? And are we continuously looking for ways to reduce cost or unnecessary requirements both in individual programs and across all our major defense acquisition programs?

f. Are we using all the tools in our toolkit to drive positive outcomes? For example are we writing contracts that reward only good performance? Have we empowered our acquisition program managers to be proper stewards of taxpayer dollars? Are contractors' earned value management systems collecting the right information at the right time to warn of poor execution? Is the acquisition workforce large enough, with the proper training and experience, to properly oversee our programs?

g. For programs that do experience cost growth, how does the Department decide whether to continue, modify, or terminate the program?

### **Determining the “Best Value” Acquisition Solution for the Warfighter**

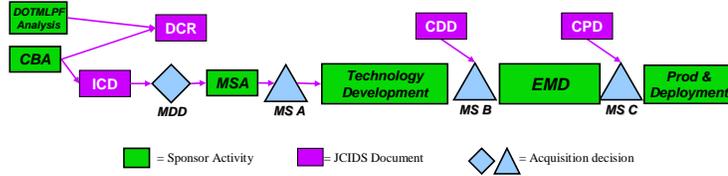
To address the question of whether we are making the right investment decisions, the Department uses Capability Portfolio Management (CPM). CPM advises the Deputy Secretary and the Heads of the DoD Components on how to optimize capability investments across the defense enterprise (both materiel and non-materiel) and minimize risk in meeting the Department's capability needs in support of strategy. Under CPM, recommendations are made regarding integration, coordination, and synchronization of capability requirements to capability investments. It is used to evaluate capability

demand (both warfighting and non-warfighting) against resource constraints, to identify and assess risks, and to suggest capability trade-offs.

The Joint Staff's Joint Capabilities Integration and Development System (JCIDS) process was created to support the statutory requirements of the JROC to validate joint warfighting requirements. JCIDS, shown pictorially below, is a key supporting process for DOD acquisition and PPBE processes, with the primary objective to ensure the joint warfighter receives the capabilities required to successfully execute the missions assigned to them. When a Service or agency determines that they may have an issue, they perform a capabilities-based assessment to identify: the capabilities (and operational performance criteria) required to successfully execute missions; the shortfalls in existing weapon systems to deliver those capabilities and the associated operational risks; and the possible non-materiel solutions or the need for materiel solutions for the capability shortfalls. The results are documented in an Initial Capabilities Document which, upon approval, validates the capability need and supports two alternative processes. First, it can support the development and implementation of a non-materiel solution. Second, it can support the initiation of the acquisition process, through a Materiel Development Decision, to identify and develop a materiel solution.



# JCIDS and Acquisition

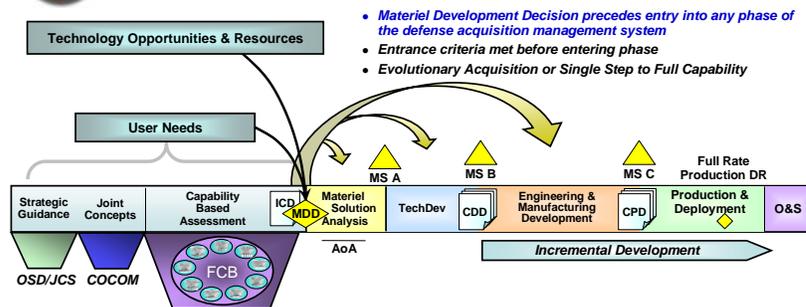


CBA = Capabilities Based Assessment  
 MDD = Materiel Development Decision  
 MSA = Materiel Solutions Analysis  
 EMD = Engineering & Manufacturing Development

When the ICD demonstrates the need for a materiel solution, the JROC shall recommend that the Milestone Decision Authority (MDA) consider potential materiel solutions. The MDA, working with appropriate stakeholders, shall determine whether there is sufficient information to proceed with a Materiel Development Decision (MDD). The MDD, described below, begins the Materiel Solution Analysis Phase and represents the formal entry point into the acquisition process. It is mandatory for all programs.



## Mandatory "Materiel Development Decision"



- Materiel Development Decision precedes entry into any phase of the defense acquisition management system
- Entrance criteria met before entering phase
- Evolutionary Acquisition or Single Step to Full Capability

- JROC recommends that the Milestone Decision Authority (MDA) consider potential materiel solutions
- MDA ensures necessary information is available to support the decision
- Materiel Solution Analysis Phase begins with the MDD—the formal entry point into the acquisition process, mandatory for all programs
- At the MDD, the Joint Staff presents the JROC recommendations; the DoD Component presents the ICD and a preliminary concept of operations, a description of the needed capability and operational risk, and the basis for determining that non-materiel approaches will not sufficiently mitigate the capability gap
- D,PA&E (or DoD Component equivalent) proposes Assessment of Alternatives (AoA) study guidance
- MDA approves the AoA study guidance; determines the acquisition phase of entry; identifies the initial review milestone; and designates the lead DoD Component(s)
- Decisions documented in an Acquisition Decision Memorandum (ADM)

At the MDD review, the Joint Staff shall present the JROC recommendations and the DoD Component shall present the ICD including: the preliminary concept of operations, a description of the needed capability, the operational risk, and the basis for determining that non-materiel approaches will not sufficiently mitigate the capability gap.

The Director, Program Analysis & Evaluation (DPA&E) proposes study guidance for the Analysis of Alternatives (AoA). The AoA focuses on identification and analysis of alternatives, measures of effectiveness, cost, schedule, concepts of operations, and overall risk. The AoA also assesses the critical technology elements associated with each proposed materiel solution, including technology maturity, integration risk, manufacturing feasibility, and, where necessary, technology maturation and demonstration needs. To achieve the best possible system solution, emphasis is placed on innovation and competition, but its important to emphasize that the AoA examines the full spectrum of alternatives; starting with current capability and moving to an entirely new materiel solution with the goal of balancing the capability needs, with what the Department can effectively acquire and afford to achieve the best value proposition for our Nation.

The Materiel Solution Analysis Phase ends when the AoA has been completed, materiel solution options for the capability need identified in the approved ICD have been recommended by the lead DoD Component conducting the AoA, and the phase-specific entrance criteria for the initial review milestone have been satisfied. After a Milestone A review, the program moves to the Technology Development phase.

The purpose of the Technology Development phase is to reduce technology risk, determine and mature the appropriate set of technologies to be integrated into a full system, and to demonstrate critical technology elements on prototypes. I would note that if, during Technology Development, the cost estimate upon which a Milestone A certification was based increases by 25 percent or more, the MDA must consult with the JROC to determine whether the resources required to develop and procure the system remains consistent with the priority level assigned by the JROC. If not, the MDA may rescind the Milestone A approval.

During the Technology Development phase, the strategy and associated funding provides for two or more competing teams producing prototypes of the system and/or key system elements prior to, or through, Milestone B. Prototype systems or appropriate component-level prototyping are employed to continue reduction of technical risk, validate designs and cost estimates, evaluate manufacturing processes, and refine requirements, again with the goal of ensuring the acquisition enterprise pursues the best value solution to meet warfighter needs.

The project exits the Technology Development Phase when an affordable program or increment of militarily useful capability has been identified; the technology and manufacturing processes for that program or increment have been assessed and demonstrated in a relevant environment; manufacturing risks have been identified; a system or increment can be developed for production within a short timeframe (normally less than 5 years for weapon systems); or, when the MDA decides to terminate the effort. During Technology Development, the user prepares the Capability Development

Document (CDD) to support initiation of the acquisition program or evolutionary increment, refine the integrated architecture, and clarify how the program will lead to joint warfighting capability. The CDD, informed by technology maturity, life cycle cost, and schedule considerations, builds on the ICD and provides the detailed operational performance parameters necessary to complete design of the proposed system.

### **Executing the “Best Value” Program**

The Acquisition Program Baseline is the key document for program management. It reflects the approved program being executed. It is the “Baseline Description” of the program and includes sufficient parameters to describe the cost estimate (also referred to as the “Baseline Estimate” for major defense acquisition programs), schedule, performance, supportability, and other relevant factors. The APB becomes the source document when determining whether a program has committed a “Nunn-McCurdy” breach for cost or schedule. The first APB is approved by the MDA prior to entry into EMD. A Milestone B decision follows the completion of Technology Development and, where successful, marks the start of the Engineering and Manufacturing Development (EMD) phase.

The purpose of the EMD Phase is to develop a system or an increment of capability; complete full system integration (technology risk reduction occurs during Technology Development); develop an affordable and executable manufacturing process; ensure operational supportability with particular attention to minimizing the logistics footprint; implement human systems integration; design for producibility; ensure affordability; protect critical program information by implementing appropriate

techniques such as anti-tamper; and demonstrate system integration, interoperability, safety, and utility. Transition into EMD requires full funding (i.e., inclusion of the dollars and manpower needed for all current and future efforts to carry out the acquisition strategy in the budget and out-year program), which is programmed in anticipation of the Milestone B decision. The CDD, Acquisition Strategy, Systems Engineering Plan, and Test and Evaluation Master Plan (TEMP) guide the EMD phase.

The Acquisition Strategy describes how the PM plans to employ contract incentives to achieve required cost, schedule, and performance outcomes. EMD effectively integrates the acquisition, engineering, and manufacturing development processes with Test and Evaluation (T&E). T&E is conducted in an appropriate continuum of live, virtual, and constructive system and operational environments. Developmental and operational test activities are integrated and seamless throughout the phase. The SEP describes the program's overall technical approach, including key technical risks, processes, resources, metrics, and applicable performance incentives. It also details the timing, conduct, and success criteria of technical reviews.

Successful completion of the EMD phase leads to a Milestone C decision and entrance into the Production and Deployment Phase. The purpose of the Production and Deployment Phase is to achieve an operational capability that satisfies mission needs. Operational test and evaluation determines the effectiveness and suitability of the system. The MDA makes the decision to commit the Department of Defense to production at Milestone C. Milestone C authorizes entry into Low Rate Initial Production (LRIP) for major defense acquisition programs, into production or procurement (for non-major

systems that do not require LRIP), or into limited deployment in support of operational testing for major automated information systems or software-intensive systems with no production components.

LRIP is intended to result in completion of manufacturing development in order to ensure adequate and efficient manufacturing capability and to produce the minimum quantity necessary to provide production or production-representative articles for operational test and evaluation, establish an initial production base for the system; and permit an orderly increase in the production rate for the system, sufficient to lead to full-rate production upon successful completion of operational (and live-fire, where applicable) testing.

Continuation into full-rate production results from a successful Full-Rate Production Decision Review by the MDA. This effort delivers the fully funded quantity of systems and supporting materiel and services for the program or increment to the users. During this effort, units will typically attain Initial Operational Capability (IOC).

Throughout the acquisition process, the Department uses a variety of program and technical reviews to assess program status and for decision making purposes. Among these reviews are the Defense Acquisition Board (DAB) reviews. The DAB advises the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) on critical acquisition decisions. The USD(AT&L) chairs the DAB. Configuration Steering Boards (CSBs) meet at least annually to review all requirements changes and any significant technical configuration changes for major defense acquisition programs in development that have the potential to result in cost and schedule impacts to the program.

Such changes will generally be rejected, deferring them to future blocks or increments. Changes are not approved unless funds are identified and schedule impacts mitigated. Program Support Reviews are a means to inform an MDA and Program Office of the status of technical planning and management processes by identifying cost, schedule, and performance risk and recommendations to mitigate those risks. Defense Acquisition Executive Summary (DAES) reviews. The DAES provides an early-warning report to USD(AT&L) and ASD(NII). The DAES describes actual program problems, warns of potential program problems, and describes mitigating actions taken or planned. At minimum, the DAES should report program assessments (including interoperability), unit costs, and current estimates.

In addition to program-level assessments, the Department uses quantitative tools to assess contract performance. Earned Value Management (EVM) is a widely accepted industry best practice for project management that is used not only in DoD, but other Federal government agencies as well. It is an integrated management system that coordinates the work scope, schedule, and cost goals of a program or contract, and objectively measures progress toward these goals. EVM is a tool used by program managers to: (1) quantify and measure program/contract performance, (2) provide an early warning system for deviation from a baseline, and (3) provide a means to forecast final cost and schedule outcomes.

The overview provided here is focused on major defense acquisition programs and reviews conducted by the Office of the Secretary of Defense. However, the Military Departments apply the same principles and processes to smaller programs that do not

reach the threshold of a major defense acquisition program. In addition, there are similar processes for information systems and processes to address unique activities, such as for missile defense. In each case, however, analogous processes and procedures provide the Department the information needed to decide when and whether to commit resources and to oversee program execution.

The recent issuance of the new DoD Instruction 5000.2 results in the implementation of many initiatives aimed at ensuring programs are started with a solid foundation, are focused on disciplined execution, and deliver capability to the warfighter within cost and schedule parameters. It will take time for us to fully realized the benefit of these policy initiatives. However, we will continue to look for opportunities to improve the Defense Acquisition System. I look forward to forward to answering any questions you might have.