



Department of Defense INSTRUCTION

NUMBER 5134.16

August 19, 2011

Incorporating Change 1, October 15, 2018

USD(R&E)

SUBJECT: Deputy Assistant Secretary of Defense for Systems Engineering (DASD(SE))

References: See Enclosure 1

1. PURPOSE. This Instruction:

a. Establishes policy, assigns responsibilities and functions, and prescribes relationships and authorities for the DASD(SE) pursuant to section 139b of title 10, United States Code (Reference (a)) and in accordance with the authority in DoD Directive 5134.01 (Reference (b)) and DoD Instruction 5000.02 (Reference (c)).

b. Incorporates and cancels Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) Memorandums (References (d), (e), and (f)).

2. APPLICABILITY. This Instruction applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the Department of Defense (hereafter referred to collectively as the "DoD Components").

3. POLICY. It is DoD policy that the DASD(SE) shall be the focal point for all policy, practice, procedures, and acquisition workforce issues relating to systems engineering, development planning, and related engineering fields within the Department of Defense.

4. RESPONSIBILITIES. See Enclosure 2.

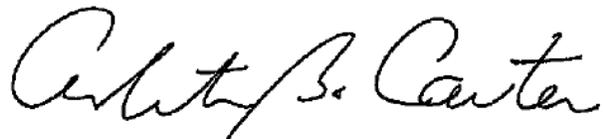
5. RELATIONSHIPS. See Enclosure 3.

6. AUTHORITIES. See Enclosure 4.

7. RELEASABILITY. UNLIMITED. This Instruction is approved for public release and is available on the Internet from the DoD Issuances Website at <http://www.dtic.mil/whs/directives>.

8. SUMMARY OF CHANGE 1. This change reassigns the office of primary responsibility for this Instruction to the Under Secretary of Defense for Research and Engineering in accordance with the July 13, 2018 Deputy Secretary of Defense Memorandum (Reference (g)).

9. EFFECTIVE DATE. This Instruction is effective upon its publication to the DoD Issuances Website.



Ashton B. Carter
Under Secretary of Defense for
Acquisition, Technology, and Logistics

Enclosures

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ENCLOSURE 1

REFERENCES

- (a) Section 139b of title 10, United States Code
- (b) DoD Directive 5134.01, "Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)),” December 9, 2005
- (c) DoD Instruction 5000.02, "Operation of the Defense Acquisition System,” December 8, 2008
- (d) Under Secretary of Defense for Acquisition, Technology, and Logistics Memorandum, "Policy for Systems Engineering in DoD,” February 20, 2004 (hereby canceled)
- (e) Under Secretary of Defense for Acquisition, Technology, and Logistics Memorandum, "Policy Addendum for Systems Engineering,” October 22, 2004 (hereby canceled)
- (f) Under Secretary of Defense for Acquisition, Technology, and Logistics Memorandum, "Appointment of Defense Standardization Executive,” March 9, 2010 (hereby canceled)
- (g) Deputy Secretary of Defense Memorandum, "Establishment of the Office of the Under Secretary of Defense for Research and Engineering and the Office of the Under Secretary of Defense for Acquisition and Sustainment,” July 13, 2018
- (h) Directive-Type Memorandum 10-017, "Development Planning to Inform Materiel Development Decision (MDD) Reviews and Support Analyses of Alternatives (AoA),” September 13, 2010
- (i) DoD Directive 5105.82, "Deputy Chief Management Officer (DCMO) of the Department of Defense,” October 17, 2008
- (j) DoD Directive 8000.01, "Management of the Department of Defense Information Enterprise,” February 10, 2009
- (k) Chairman of the Joint Chiefs of Staff Instruction 3137.01D, "The Functional Capabilities Board Process,” May 26, 2009
- (l) DoD Instruction 5200.39, "Critical Program Information (CPI) Protection Within the Department of Defense,” July 16, 2008

ENCLOSURE 2

RESPONSIBILITIES

1. DASD(SE). The DASD(SE) is the principal advisor to the Secretary of Defense and the USD(AT&L) on systems engineering, development planning, and related engineering fields in the Department of Defense in accordance with Reference (a) and Reference (c). In this capacity, the DASD(SE) shall:

a. Develop policies and guidance for:

(1) The use of systems engineering and development planning principles and best practices.

(2) The use of systems engineering approaches to enhance reliability, availability, and maintainability on Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) programs. For those National Intelligence Programs for which the USD(AT&L) is the designated co-Milestone Decision Authority, DASD(SE) will coordinate with Deputy Assistant Secretary of Defense for Space and Intelligence and work with the Office of the Director of National Intelligence (ODNI) to ensure best systems engineering practices are employed to ensure consistency between DASD(SE) and ODNI policies and guidance.

(3) The development of systems engineering plans (SEPs) for MDAPs and MAIS programs in accordance with Reference (a) and Reference (c). The title “SEP” will be applied to the document referred to in section 102 of Reference (a) as the “systems engineering master plan.”

(4) Systems engineering considerations in support of lifecycle management and sustainability.

(5) The inclusion of provisions relating to systems engineering and reliability growth in requests for proposals.

b. Provide advice and make recommendations to the Secretary of Defense and the USD(AT&L) regarding systems engineering and development planning and the execution of these activities within and across Defense acquisition programs. Issue guidance to and consult with the Heads of the DoD Components with respect to systems engineering and development planning in the Department of Defense.

c. Provide guidance to Defense acquisition programs for developing and documenting each program’s technical strategy and management approach in the SEP throughout the program’s lifecycle.

d. Provide supplemental advice to Defense acquisition programs on development and application of required DoD Architecture Framework products as part of integrated solution architectures (Reference (c)), and to inform system interoperability design considerations.

e. Review and approve the SEP for each MDAP and MAIS program.

f. Monitor and review the systems engineering and development planning activities of the MDAPs and MAIS programs (Directive-Type Memorandum 10-017 (Reference (h))).

(1) Participate in the development of Analysis of Alternatives (AoA) study guidance, study plan, and AoA oversight, including the review and assessment of alternative materiel solutions.

(2) Participate in key systems engineering technical reviews, design reviews, and other program events.

(3) Conduct planned reviews (Program Support Reviews to support Overarching Integrated Product Team reviews), ad hoc reviews (as directed by the USD(AT&L) and in response to requests by program managers), and periodic independent technical reviews in accordance with Reference (c) of program planning and execution to assist program managers in the identification and mitigation of risk and to provide a sound analysis to support OSD's oversight role.

g. As an advisory member of the Defense Acquisition Board (DAB) and other key acquisition bodies, provide independent assessments of MDAPs and MAIS programs' systems engineering, development planning, technical execution, and risk.

h. Provide input on the inclusion of systems engineering requirements in the process for consideration of joint military requirements by the Joint Requirements Oversight Council (JROC), including specific input relating to each capabilities development document.

i. In coordination with the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DASD(DT&E)) and the Director of Performance Assessments and Root Cause Analyses, issue guidance on the development and tracking of detailed, measurable performance criteria in MDAP and MAIS program SEPs and Test and Evaluation Master Plans; the use of developmental test and evaluation to measure the achievement of specific performance objectives within a SEP; and a system for storing and tracking information relating to the achievement of these performance criteria.

j. Provide advocacy, oversight, and guidance to elements of the acquisition workforce responsible for systems engineering, development planning, and lifecycle management and sustainability functions.

k. Serve as the Functional Leader for the Systems Planning, Research, Development, and Engineering (SPRDE)/ Systems Engineering; SPRDE/ Program Systems Engineer; and Production, Quality, and Manufacturing career fields within the Department of Defense.

- l. Serve as the Defense Standardization Executive with authority over the Defense Standardization Program Office.
- m. Develop policies and guidance for the integration of specialty engineering functions as part of the systems engineering responsibility for mission assurance in the acquisition process including, but not limited to, cyber security; program protection in accordance with Reference (c); safety; software; reliability, availability, and maintainability; human systems integration; modeling and simulation; configuration management; data management; and risk management.
- n. Periodically review the organizations and capabilities of the Military Departments and Defense Agencies with respect to systems engineering, development planning, and lifecycle management and sustainability, and identify needed changes or improvements to such organizations and capabilities.
- o. Closely coordinate with the DASD(DT&E) to ensure that DoD developmental test and evaluation activities are fully integrated into and consistent with the systems engineering and development planning processes of the Department of Defense.
- p. Work closely with the DASD(DT&E) to ensure the seamless integration of developmental test and evaluation as the verification function of the systems engineering process to include maintenance of a joint system for storing and tracking achievement of MDAP and MAIS program performance criteria.
- q. Cooperate with Director of Cost Analysis and Program Evaluation and serve as a participant and technical advisor in the development of AoA study guidance and study plan and serve on the AoA Study Advisory Group to facilitate the consideration of technology and engineering risks for the alternatives under consideration (Reference (h)).
- r. Cooperate with the Deputy Chief Management Officer to provide systems engineering and development planning advice for DoD Business Operations (DoD Directive 5105.82 (Reference (i))) and Defense Business Systems under the authority of the Defense Business Systems Management Committee.
- s. Provide systems engineering and development planning advice to the DoD Chief Information Officer to inform the DoD Information Enterprise (DoD Directive 8000.01 (Reference (j))).
- t. Work with the Vice Chairman of the Joint Chiefs of Staff to provide systems engineering and development planning advice and risk assessments to inform JROC processes in accordance with Reference (a) and Chairman of the Joint Chiefs of Staff Instruction 3137.01D (Reference (k)).
- u. Work with the Under Secretary of Defense for Intelligence to integrate systems engineering efforts with specialty engineering functions such as cyber security and program

protection and policies and guidance relating to threat impacts on derived requirements' trade space in accordance with DoD Instruction 5200.39 (Reference (l)).

v. Establish and lead a senior-level forum with participation from the DoD Components, as appropriate in accordance with Reference (d), as a means to collaborate and leverage activities within the Components and to provide forums to institutionalize systems engineering and development planning across the Department of Defense.

w. Ensure that all DASD(SE) policies, guidance, procedures, and programs are designed and managed to improve standards of performance, ethics, economy, and efficiency and that all subordinate organizations are attentive and responsive to the requirements of their organizational customers, both internal and external to the Department of Defense.

x. Perform such other activities relating to the systems engineering and development planning activities of the Department of Defense as the USD(AT&L) may prescribe.

2. OTHER OSD OFFICIALS AND THE HEADS OF THE DoD COMPONENTS. Other OSD Officials and the Heads of the DoD Components shall coordinate with the DASD(SE) on all matters under their purview related to the authorities, responsibilities, and functions assigned in this Instruction in accordance with Reference (a) and Reference (c).

3. THE SECRETARY OF EACH MILITARY DEPARTMENT AND HEAD OF EACH DEFENSE AGENCY WITH RESPONSIBILITY FOR A MDAP OR MAIS PROGRAM. The Secretary of each Military Department and Head of each Defense Agency shall develop and implement plans (or affirm to such if the National Security Agency) to ensure the Military Department or Defense Agency concerned has provided appropriate resources for development planning and systems engineering organizations with adequate numbers of trained personnel to:

a. Support key requirements, acquisition, and budget decisions made for each MDAP or MAIS program prior to Milestone A approval and Milestone B approval through a rigorous systems analysis and systems engineering process.

b. Include a robust program for improving reliability, maintainability, and sustainability as an integral part of design and development within the SEP for each MDAP.

c. Identify systems engineering requirements, including reliability, maintainability, and lifecycle management and sustainability requirements, during the Joint Capabilities Integration Development System process, and incorporate such systems engineering requirements into contract requirements for each MDAP and MAIS program.

ENCLOSURE 3

RELATIONSHIPS

In the performance of assigned functions and responsibilities, the DASD(SE) shall:

- a. Report to the USD(AT&L) through the Assistant Secretary of Defense (Research and Engineering).
- b. Serve as an advisory member of the DAB.
- c. Maintain relationships with national and international organizations to promote the application of systems engineering and development planning, establish common standards, and share best practices.
- d. Have access to any records or data of the Department of Defense (including the records and data of each Military Department and including classified and proprietary information, as appropriate) that the DASD(SE) considers necessary to review in order to carry out DASD(SE) assigned duties.

ENCLOSURE 4

AUTHORITIES

In the performance of assigned functions and responsibilities, the DASD(SE) is hereby delegated authority to:

a. Develop DoD policy for the approval and signature of the USD(AT&L) in DoD Instructions.

b. Communicate directly with the Heads of the DoD Components, as necessary, to carry out assigned responsibilities and functions, including the transmission of requests for advice and assistance. Communications to the Military Departments shall be through the Secretaries of the Military Departments, their designees, or as otherwise provided in law or directed by the Secretary of Defense in other DoD issuances. Communications to the Commanders of the Combatant Commands normally shall be transmitted through the Chairman of the Joint Chiefs of Staff.

GLOSSARY

PART I. ABBREVIATIONS AND ACRONYMS

AoA	analysis of alternatives
DAB	Defense Acquisition Board
DASD(DT&E)	Deputy Assistant Secretary of Defense for Developmental Test and Evaluation
DASD(SE)	Deputy Assistant Secretary of Defense for Systems Engineering
JROC	Joint Requirements Oversight Council
MAIS	Major Automated Information System
MDAP	Major Defense Acquisition Program
ODNI	Office of the Director of National Intelligence
RAM	reliability, availability, maintainability
SAE	Service Acquisition Executive
SEP	Systems Engineering Plan
SPRDE	Systems Planning, Research, Development, and Engineering
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics

PART II. DEFINITIONS

development planning. Encompasses the engineering analysis and technical planning activities that provide the foundation for informed investment decisions on the fundamental path a materiel development will follow to effectively and affordably meet operational needs.