Army Regulation 700–127

Logistics

Integrated Product Support

Headquarters
Department of the Army
Washington, DC
20 February 2024

UNCLASSIFIED

SUMMARY of CHANGE

AR 700–127
Integrated Product Support

This mandated revision, dated 20 February 2024—

- Updates boilerplate statements in accordance with DA Pam 25–40 (title page).
- Updates the purpose paragraph (para 1–1).
- Adds records management requirements (para 1–5).
- Updates a responsibility of the Assistant Secretary of the Army (Acquisition, Logistics and Technology) (para 1–6*e*(2)).
- Updates a responsibility of the Assistant Secretary of the Army (Financial Management and Comptroller) in accordance with AGO 2020–01 (para 1–7*c*).
- Separates Chief Information Officer and Deputy Chief of Staff, G–6 responsibilities in accordance with AGO 2020–01 (paras 1–9 and 1–13).
- Updates "U.S. Army Medical Department Center and School" to "U.S. Army Medical Center of Excellence" (para 1–19).
- Separates responsibilities of the Chief, National Guard Bureau and Commanding General, U.S. Army Reserve Command from paragraph 1–24 (paras 1–16 and 1–21).
- Updates "U.S. Army Medical Research and Materiel Command" to "U.S. Army Medical Research and Development Command" and removes responsibilities assigned to the Commanding General, U.S. Army Medical Research and Development Command pursuant to Section 1073c(e), Title 10, United States Code (para 1–22).
- Revises integrated product support elements to conform to DoDI 5000.91 (para 2–2*a*(12)).
- Updates reference Sections 2320 and 2321, Title 10, United States Code to Section 3772, Title 10, United States Code (paras 2–4*b* and 7–2*e*).
- Updates reference Section 2437, Title 10, United States Code to Section 4321, Title 10, United States Code (paras 2–4*b* and 8–20).
- Updates reference Section 2399, Title 10, United States Code to Section 4171, Title 10, United States Code (paras 2–4*b* and 11–1*c*).
- Changes chapter title from "Integrated Product Support and the Defense Acquisition Framework" to "Integrated Product Support and the Adaptive Acquisition Framework" (chap 3).
- Adds required text for the adaptive acquisition framework pursuant to DoDI 5000.91 (paras 3–2 through 3–6).
- Updates reference CJCSI 3170.01I (cancelled) to CJCSI 5123.01I (para 3–7*b*).
- Clarifies paragraphs as major capability acquisitions (paras 3–7 through 3–12).

- Incorporates Army Directive 2018–26, Enabling Modernization through the Management of Intellectual Property, dated 7 December 2018 (paras 4–1*h*(2), 4–1*h*(3), 4–1*h*(7), 4–4*h*(9)(*d*), 4–16*a*, 4–16*i*, 4–16*j*, 7–1*d*, and 7–1*g*).
- Adds supply chain risks to supportability risk management in accordance with DoDI 5000.91 (para 4–3*a*(1)).
- Updates product support manager roles in accordance with DoDI 5000.91 (para 4–4).
- Clarifies delegation of responsibility by the program manger to the product support manager (para 4–4*h*(9)(*d*)).
- Removes references to nonstandard equipment (para 4–15*b*(1)).
- Updates urgent capability acquisition criteria as it applies to adaptive acquisition framework (para 4–15*b*(3)).
- Updates reference SAE–GEIA–STD–0016 to TECHAMERICA–STD–0016 (para 6–2b(10)).
- Clarifies that contracting officers must ensure that contracts include necessary provisions for a software tool (para 6–5*f*).
- Clarifies that core logistics determinations include items of military equipment (para 6–8*a*(2)).
- Adds a reference to AR 70–1 for intellectual property strategy (para 7–1*a*).
- Updates life cycle sustainment plan requirements in accordance with DoDI 5000.91 (para 8–2, table 8–1, and table 8–2).
- Removes a requirement for the Vice Chief of Staff of the Army to approve recapitalization (para 8–9).
- Adds requirement for product support managers to follow DoDI 4245.15 and DoDM 4245.15 (para 8–13).
- Adds requirements for developing a transition to sustainment plan (para 8–23).
- Updates reference DA Pam 700–142 (superseded) to DA Pam 770–3 (para 9–4*a*).
- Updates sustainment reviews pursuant to Section 4323, Title 10, United States Code (para 12–7*b* through 12–7*d*).
- Removes reference to the sustainment quad chart (para 12–9).
- Updates references (app A).
- Updates the glossary.
- Updates reference AR 700–142 (superseded) to AR 770–3 (throughout).
- Removes requirement for the sustainment quad chart (throughout).
- Updates reference Section 2366a, Title 10, United States Code to Section 4251, Title 10, United States Code (throughout).
- Updates reference Section 2366b Title 10, United States Code to Section 4252, Title 10, United States Code (throughout).
- Changes Assistant Chief of Staff for Installation Management to Deputy Chief of Staff, G–9 in accordance with Army General Orders 2019–23.
- Changes Logistics Support Activity to Logistics Data Analysis Center (throughout).

- Incorporates Army General Orders 2021–11, Redesignation of the Office of the Deputy Assistant Secretary of the Army for Acquisition Policy and Logistics as the Office of the Deputy Assistant Secretary of the Army for Sustainment, dated 3 November 2021 (throughout).

Headquarters
Department of the Army
Washington, DC
20 February 2024

*Army Regulation 700–127

Effective 20 March 2024

Logistics

Integrated Product Support

By Order of the Secretary of the Army:

RANDY A. GEORGE
General, United States Army
Chief of Staff

Official:

MARK F. AVERILL
Administrative Assistant to the Secretary of the Army

History. This publication is a mandated revision. The portions affected by this mandated revision are listed in the summary of change.

Summary. This regulation prescribes policy for implementing life cycle management and product support including performance-based logistics, through the Army's Integrated Product Support Program.

Applicability. This regulation applies to the Regular Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve, unless otherwise stated.

Proponent and exception authority. The proponent of this regulation is the Assistant Secretary of the Army (Acquisition, Logistics and Technology). The proponent has the authority to approve exceptions or waivers to this regulation that are consistent with controlling law and regulations. The proponent may delegate this approval authority, in writing, to a division chief within the proponent agency or its direct reporting unit or field operating agency, in the grade of colonel or the civilian equivalent. Activities may request a waiver to this regulation by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior legal officer. All waiver requests will be endorsed by the commander or senior leader of the requesting activity and forwarded through their higher headquarters to the policy proponent. Refer to AR 25–30 for specific requirements.

Army internal control process. This regulation contains internal control provisions in accordance with AR 11–2 and identifies key internal controls that must be evaluated (appendix B).

Supplementation. Supplementation of this regulation and establishment of command and local forms are prohibited without prior approval from the Assistant Secretary of the Army (Acquisition, Logistics and Technology) (SAAL–ZL), via email at usarmy.pentagon.hqda-asa-alt.mbx.asa-alt-publication-updates@army.mil.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to the Assistant Secretary of the Army (Acquisition, Logistics and Technology) (SAAL–ZF), via email at usarmy.pentagon.hqda-asa-alt.mbx.asa-alt-publication-updates@army.mil.

Committee management. AR 15–39 requires the proponent to justify establishing/continuing committee(s), coordinate draft publications, and coordinate changes in committee status with the U.S. Army Special Programs Directorate at email usarmy.pentagon.hqda-hsa.mbx.committee-management@army.mil. Further, if it is determined that an established "group" identified within this regulation later takes on the characteristics of a committee as found in AR 15–39, then the proponent will follow all AR 15–39 requirements for establishing and continuing the group as a committee.

Distribution. This publication is available in electronic media only and is intended for the Regular Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve.

Contents (Listed by paragraph and page number)

*This publication supersedes AR 700-127, dated 22 October 2018.

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Contents—Continued

Chapter 1
General

Section I

Introduction

1–1. Purpose
This regulation prescribes the Department of the Army (DA) policy for implementing life cycle management and product support, including performance-based logistics, through the Army's Integrated Product Support (IPS) Program. The IPS Program includes planning, developing, acquiring, and sustaining well-defined, affordable performance-based product support strategies (PBPSSs) that meet the Soldier's requirements for Army materiel and software throughout their life cycle.

1–2. References and forms
See appendix A.

1–3. Explanation of abbreviations and terms
See the glossary.

1–4. Responsibilities
Responsibilities are listed in section II of chapter 1.

1–5. Records management (recordkeeping) requirements
The records management requirement for all record numbers, associated forms, and reports required by this publication are addressed in the Records Retention Schedule–Army (RRS–A). Detailed information for all related record numbers, forms, and reports are located in Army Records Information Management System (ARIMS)/RRS–A at https://www.arims.army.mil. If any record numbers, forms, and reports are not current, addressed, and/or published correctly in ARIMS/RRS–A, see DA Pam 25–403 for guidance.

Section II

Responsibilities

1–6. Assistant Secretary of the Army (Acquisition, Logistics and Technology)
The ASA (ALT) will—

a. Develop IPS policy.

b. Oversee the development and execution of IPS.

c. Approve product support strategies and plans for Army acquisition category (ACAT) I programs and ACAT II programs where the Army Acquisition Executive (AAE) is the milestone decision authority (MDA).

d. Ensure certification of Major Defense Acquisition Programs (MDAPs) related to sustainment planning in accordance with Section 4251, Title 10, United States Code (10 USC 4251) and 10 USC 4252.

e. Assign responsibilities to the Deputy Assistant Secretary of the Army for Sustainment (DASA (S)) who will—

(1) Establish policy for the life cycle sustainment plan (LCSP) and Independent Logistics Assessment (ILA).

(2) Where the AAE is the MDA, approve product support strategies, LCSPs, and applicable annexes.

(3) Ensure IPS requirements are validated and included in the materiel and software acquisition process to support full materiel release of programs, materiel, and software.

(4) Provide a supportability position on materiel release of ACAT I through III materiel and software.

(5) Serve as the Army Life Cycle Logistician for new, modified, upgraded, and displaced materiel and software, except for supply class VIII; medical materiel and software. As the Army Life Cycle Logistician, the DASA (S) will—

(a) Establish internal procedures and techniques to assess supportability management and execution for assigned acquisition programs.

(b) Review capability requirements documents (CRDs), IPS related program management documentation, test plans, and contract and solicitation documents to ensure IPS considerations are appropriately addressed.

(c) Assist materiel developers (MATDEVs) in developing IPS strategies and plans.

(d) Participate in integrated product teams (IPT) to include the overarching integrated product team (OIPT), product support management integrated process team (PSMIPT), test and evaluation (T&E) working-level integrated product team (WIPT), and sustainment review (SR) activities.

(e) Inform the MATDEV, capability developer (CAPDEV), materiel command, and other program participants of supportability planning deficiencies. Unresolved issues will be elevated to the OIPT.

(f) Oversee supportability testing.

(g) Participate in milestone (MS) decisions and other program reviews (see AR 70–1).

(h) Convene and chair IPS reviews for materiel and software approaching a MS decision review.

(i) Establish the Headquarters, Department of the Army (HQDA) position concerning the deployability and supportability of all acquisition programs.

(j) Review the Army manpower and personnel integration (MANPRINT) effort, in coordination with other Army staff agencies, to ensure effective implementation in accordance with HQDA and DoD requirements.

(k) Serve as the HQDA proponent and chair for the Army Integrated Product Support Executive Committee (AIPSEC).

(l) Serve as the HQDA functional chief and representative for the life cycle logistics career field of the Army Acquisition Corps and workforce.

(m) Serve as the HQDA proponent for the product supportability analysis (PSA) process and the resulting logistics product data (LPD).

(n) Establish and manage the Life Cycle Logistics Achievement of the Year Awards Program.

(o) Serve as the Army point of contact for the DoD Product Support Manager (PSM) of the Year Award, and the Secretary of Defense Performance-based Logistics Awards Program.

1–7. Assistant Secretary of the Army (Financial Management and Comptroller)

The ASA (FM&C) will—

a. Review program and budget requests supporting life cycle contractor support (LCCS).

b. Integrate materiel into working capital funds, as appropriate.

c. Provide DASA (S) required cost and economic analysis to support IPS program.

1–8. Assistant Secretary of the Army (Installations, Energy and Environment)

The ASA (IE&E) will ensure that environmental considerations, including environmental compliance, hazardous material use, and environmental sustainability are incorporated into PSAs.

1–9. The Chief Information Officer

The CIO will assist the ASA (ALT) for the acquisition of information management, information technology, and information resources, to include monitoring and evaluating the performance of the programs.

1–10. Deputy Chief of Staff, G–1

The DCS, G–1 will participate in IPS manpower planning and SRs in support of acquisition programs.

1–11. Deputy Chief of Staff, G–3/5/7

The DCS, G–3/5/7 will—

a. Ensure initial items of new equipment, including support equipment, are issued to the training base for timely training development, and establishment of functional training documentation and procedures.

b. Ensure unit and/or activity modified table of organization and equipment and/or table of distribution and allowances (TDA) authorization documents are updated to enable timely fielding of equipment and supplies.

c. Participate in SRs.

1–12. Deputy Chief of Staff, G–4

The DCS, G–4 will—

a. Ensure that—

(1) The sustainment functions of readiness, supply services, maintenance, transportation, aviation, munitions, security assistance and related automated logistics systems management are fully integrated and properly support MATDEVs throughout the program life cycle.

(2) The Army integrated logistics architecture (AILA) supports logistics data and logistics domain requirements.

(3) The Army bulk condition-based maintenance data (ABCD) interface requirements specification data standard is formalized in the AILA.

b. Participate in SRs.

1–13. Deputy Chief of Staff, G–6

The DCS, G–6 will—

a. Review the Army Enterprise Architecture and Army Enterprise Infrastructure to include logistics domain and logistical data requirements to support the future force capabilities.

b. Ensure that logistics data and logistics domain requirements support the AILA.

c. Assist in the preparation of the standards viewpoints for integration in the AILA in support of Joint Capabilities Integration and Development System (JCIDS) MS requirements.

1–14. Deputy Chief of Staff, G–8

The DCS, G–8 will—

a. Ensure adequate resources are planned, programmed, and budgeted to execute the Army IPS program.

b. Review the funding portion of LCSPs for Army ACAT I programs to ensure alignment with programmed resources.

c. Provide analysis for and advise on product support initiatives that reduce the logistics footprint.

d. Participate in SRs for ACAT I programs.

1–15. Deputy Chief of Staff, G–9

The DCS, G–9 will—

a. Participate in the IPS process for environmental and facility implications.

b. Coordinate with MATDEVs to perform the necessary analysis, advance planning and programming for facility support for new, modified, upgraded, or displaced materiel and software commencing at pre-MS C.

c. Program for new or modified facilities at the gaining installations needed to meet the facility requirements identified in the LCSP by the Chief of Engineers (COE).

d. Participate in SRs.

1–16. Chief National Guard Bureau

The CNGB will ensure the IPS program is executed within the Army National Guard of the United States to include participating as required in the IPS process through the PSMIPT.

1–17. Chief of Engineers

The COE will—

a. Advise the MATDEV of the cost implications of materiel design and software with respect to facilities requirements and the impact on the Army's facilities standardization program.

b. Identify facility requirements of the materiel and software for the gaining Army commands (ACOMs), Army service component commands (ASCCs), and direct reporting units (DRUs), with formal input from the MATDEV, trainer/training developer (T/TD) and CAPDEV.

c. Coordinate facility and real property requirements with the CAPDEV; MATDEV; DCS, G–9; gaining ACOM, ASCC, and DRU commanders; Army Life Cycle Logistician; and T/TD.

d. Assist the MATDEV in preparation of facilities related IPS strategies and planning documentation.

e. Execute the support facility annex (SFA) process to validate facility and infrastructure requirements and prepare LCSP SFAs for ACAT I materiel. Provide guidance to other CAPDEVs, MATDEVs, T/TDs for developing SFAs for ACAT I and II materiel, or provide independent assessment and finding of "no facility impacts" based on MS B and MS C outcomes.

f. Assist the MATDEV with integrating facilities and infrastructure requirements into the product supportability process and LPD.

g. Participate in—

(1) AIPSEC.

(2) PSMIPTs for all facility program requirements and issues.

(3) SRs.

h. Designate an executive program coordinator to execute paragraphs 1–17*a* through 1–17*f* of this regulation and identify, define, validate ACAT I materiel facilities and infrastructure requirements to support the acquisition strategy (AS) and LCSP no later than MS B.

1–18. The Surgeon General

TSG will—

a. Advise and consult with MATDEVs and CAPDEVs on potential health hazards and problems associated with the medical aspects of all materiel acquisition programs.

b. Develop the IPS program for medical (class VIII) materiel, including designation of the life cycle logistician in accordance with AR 40–60 and AR 40–61.

c. Participate in SRs.

1–19. Commanders, Army commands, Army service component commands, and direct reporting units

Commanders of ACOMs, ASCCs, and DRUs will participate as required in the IPS process through the PSMIPT.

1–20. Commanding General, U.S. Army Test and Evaluation Command

The CG, ATEC is responsible for testing and evaluating suitability for all Army acquisition programs and will—

a. Assess and evaluate product support package suitability for all assigned acquisition programs.

b. Represent test and environmental issues at IPT meetings and IPS reviews.

c. Participate in suitability, developmental, and operational testing to include logistics demonstrations (LDs).

d. Influence materiel and software design to enhance suitability.

e. Identify suitability problems and their impact and assist the MATDEV in finding resolution. Elevate unresolved issues to the OIPT.

f. Ensure that the test and evaluation master plan (TEMP) adequately address how the support concept will be tested and evaluated for suitability as part of the performance of the materiel and software. Primary materiel and software performance metrics will include the following:

(1) Sustainment key performance parameters (KPPs) with two subcomponents: materiel availability and operational availability.

(2) Materiel reliability key system attributes (KSAs).

(3) Operations and support (O&S) cost KSA.

(4) Mean Downtime.

(5) Logistics footprint.

g. Review technical data received from manufacturers in regard to the acquisition of commercial and nondevelopmental items (NDIs), and determine where this data may be used to satisfy abbreviated or waiver of formal testing.

h. Document the IPS evaluation in the operational test agency MS assessment report and provide the IPS evaluation input to the MATDEV.

i. Provide representatives to the AIPSEC.

j. Include all applicable support requirements and concepts in T&E programs and plans.

k. Test and evaluate the suitability requirements, capabilities, and concepts in accordance with the approved TEMP.

l. Develop the logistics suitability T&E concept, objectives, and scope (including test resources, unique concepts, and MSs) and coordinate these with the CAPDEV and the Army Life Cycle Logistician.

m. Provide the MATDEV and other program participants with data on similar fielded materiel and software that could influence the suitability requirements.

n. Participate in the T&E WIPT, OIPT, PSMIPT, and SR activities.

o. Provide a copy of T&E plans and reports (except supply class VIII, medical materiel) to the DASA (S) (SAAL–ZL) and other PSMIPT members. Provide copies for supply class VIII medical materiel to the Commander, U.S. Army Medical Materiel Agency, (MCMR–MMT–E), Frederick, MD 21701–0501. When test reports are not available in time to permit the DASA (S) or Commander, United States Army Medical Materiel Agency assessment for decision and program reviews, authenticated test data will be provided.

p. Ensure coordination with the MATDEV prior to test to ensure that impacts of testing on the environment are considered and documented.

q. Verify technical and operational analyses for ACAT I and II programs as requested by the DASA (S).

1–21. Commanding General, U.S. Army Reserve Command

The CG, USARC will ensure commanders of U.S. Army Reserve (USAR) units participate as required in the IPS process through the PSMIPT.

1–22. Commanders of materiel commands

The principal materiel command is the U.S. Army Materiel Command (AMC). Other materiel commands include U.S. Army Intelligence and Security Command (INSCOM), the U.S. Army Installation Management Command (IMCOM), the U.S. Army Corps of Engineers (USACE), and the U.S. Army Medical Research and Development Command. The commanders of AMC, INSCOM, IMCOM, and USACE will—

a. Ensure materiel command compliance with IPS policies and procedures.

b. Provide functional support to assigned MATDEVs.

c. Assign a representative to participate in the PSMIPT during the development, acquisition, and execution of the LCSP.

d. Assist the MATDEV throughout the life cycle of the program, applying IPS principles and utilizing data collected during wartime, field exercises, and peacetime operations.

e. In addition, the Commander, AMC will—

(1) Provide support to the PSM with PSAs, analysis of product support alternatives (APSAs), and LPD to include coordination with and Defense Logistics Agency (DLA).

(2) Ensure the Logistics Information Warehouse (LIW) provides current logistics data to support CAPDEV and MATDEV logistics data requirements.

(3) Analyze and validate O&S cost performance during SRs when requested by the MATDEV.

(4) Provide—

(a) PSA technical assistance as required to ensure that IPS considerations are applied to the design of new, modified, and upgraded materiel and software, and are considered in the selection of commercial items and NDIs.

(b) PSA expertise and support to MATDEVs.

(c) IPS functional support to the MATDEV through a memorandum of agreement, which will be used to detail the support to be provided.

(d) Support to the PSM in developing core logistics analysis (CLA), core depot assessment (CDA), and depot source of repair (DSOR) analyses.

(e) Review of LCSPs.

(f) IPS planning support and software tools.

(g) A representative to the AIPSEC.

(h) Transportability engineering assistance, deployability analysis assistance, design guidance, and required approvals to MATDEVs, CAPDEVs, and other participants during acquisition (see AR 70–47).

(i) Single Army Logistics Enterprise architecture support for sustainment of materiel and software.

(j) Single Army LIW database repository to include reliability centered maintenance (RCM) data and CBM+ data.

(5) Ensure interoperability through standardization of technical data and common look and feel for electronic technical manuals (ETM) and interactive electronic technical manuals (IETM).

(6) Participate in—

(a) The systems engineering standards and specifications area of the DoD Defense Standardization Program.

(b) SRs.

(7) Maintain current government and industry standards and participate in the development of new and emerging standards.

(8) Serve as the Army's principal product support integrator (PSI) and product support provider (PSP) for the organic materiel enterprise.

1–23. Program executive officers

Program executive officers (PEOs) are responsible for oversight of the MATDEVs, program portfolios assigned to them by the AAE, and assigning PSMs to all programs in their portfolios. PEOs are responsible for oversight of their PSMs and MATDEVs compliance with this policy.

1–24. Capability developers

The Commander, U.S. Army Training and Doctrine Command (TRADOC) is the Army's principal CAPDEV. The CAPDEV for class VIII (medical materiel) is the U.S. Army Medical Center of Excellence. Other CAPDEVs include INSCOM and U.S. Army Network Enterprise Technology Command/9th Army Signal Command (This command fulfills roles as a CAPDEV and a DRU). CAPDEVs will develop operational and support concepts; doctrine, organization, and force structures; and will determine materiel and software requirements for equipping these force structures. As user representatives, CAPDEVs will ensure that materiel and software developmental efforts address user requirements. To ensure that the supportability program fulfills the needs of the user, CAPDEVs will—

a. Establish internal policies, procedures, and techniques for implementing this policy.

b. Conduct applicable PSAs and tradeoffs as a function of developing CRDs.

c. Establish logistics requirements, constraints, materiel design parameters, and system readiness objectives.

d. Conduct an analysis of alternatives (AoA) to include alternative operating and materiel and software support concepts with specific consideration of performance-based options.

e. Support the MATDEV in developing the reliability, availability, and maintainability–cost (RAM–C) rationale report.

f. Develop specific, measurable, and testable support-related materiel and software requirements or parameters based on required logistics, operational performance, life cycle cost (LCC) goals, and readiness requirements.

g. Assess the impact of the proposed materiel and software on the maintenance capabilities planned for the period in which the materiel and software will be introduced.

h. Assess the concept and technology of embedded and system health management with regard to its ability to facilitate the use of embedded diagnostics, instrumentation, prognostics, and similar maintenance enablers, and opportunities for condition-based maintenance plus (CBM+).

i. Identify key performance and related support parameters for inclusion in the CRDs, to include reliability, availability, and maintainability (RAM), interoperability, O&S cost, mean down time, manpower, and deployment footprint, that form the basis of the overall capability of the materiel and software to perform and endure in the required mission operational environment.

j. Incorporate materiel and software maintainability, interoperability, and supportability considerations into CRDs.

k. Document the supportability concept and requirements in the initial capabilities document (ICD), capability development document (CDD), and capability production document (CPD).

l. Ensure that capabilities describing tactical level logistics are documented in the AILA, and that logistics architecture submitted in support of ICD, CDD, and CPD is integrated with the AILA.

m. Develop a rough order of magnitude LCC estimate that includes all phases of the acquisition process (through disposal) and document it in the ICD. The LCC estimate will be updated in subsequent CRDs.

n. Designate an IPS lead following the materiel development decision (MDD) who will form a CAPDEV chaired PSMIPT that includes representation from the PEO PSM and appropriate IPS acquisition community stakeholders. The PSMIPT will assist the CAPDEV with IPS analyses, AoA, developing IPS contract requirements, developing the initial LCSP, and other CAPDEV activities. Once a program is initiated and a MATDEV is assigned, the CAPDEV PSMIPT will transition to become the MATDEV chaired PSMIPT. The CAPDEV PSMIPT will—

(1) Participate in pre-MS B activities with the CAPDEV.

(2) Participate in the development of the CRDs, and prepare or review all other acquisition program documentation to ensure that all IPS considerations are adequately defined.

(3) Conduct appropriate PSAs.

(4) Support the development of the initial LCSP using the results of the PSA, and ensure that the product support strategy is documented in the AS.

(5) Provide, through the CAPDEV PSMIPT, the appropriate logistics metrics (to include materiel availability, materiel reliability, ownership cost, and mean downtime), criteria, and funding requirements to the MATDEV to incorporate in the acquisition program baseline.

(6) Develop supportability testing issues in coordination with the T/TD, tester, evaluator, Army Life Cycle Logistician, and other program participants; and ensure the appropriate logistics considerations and test points are documented in the TEMP.

o. Following program initiation and assignment of a MATDEV, the CAPDEV will—

(1) Participate in the MATDEV PSMIPT.

(2) Participate in decision reviews, program reviews, and SRs.

(3) Ensure establishment of training programs by the T/TD to develop the skills needed for the operation and support of newly fielded materiel and software.

(4) In coordination with the MATDEV, ensure that user IPS requirements and constraints are identified for inclusion in contract and solicitation documents.

(5) Establish support conditions and requirements for initial operational capability (IOC) date in coordination with the MATDEV and gaining ACOM, Army National Guard (ARNG), ASCC, USAR, and DRUs.

(6) Coordinate with the—

(a) MATDEV to develop the support concept that provides the most cost and operationally effective value to the Army.

(b) Supporting and gaining commands the necessary procedures to implement the support concept.

(7) Provide a representative to support the AIPSEC.

(8) Participate in developing performance-based metrics and desired outcomes in the form of KPPs, KSAs, and additional performance attributes for CRDs, including working with the PSM to develop appropriate product support arrangements and performance-based agreements (PBAs).

1–25. Materiel developers

MATDEVs are responsible for planning and implementing IPS as an integral part of assigned materiel and software acquisition programs. MATDEVs will—

a. Ensure that passage of a program from one life cycle phase to the next occurs only when all product support requirements have been satisfactorily accomplished according to this policy and is documented in the LCSP.

b. Establish internal procedures and controls to implement this policy.

c. In coordination with the PEO, assign a PSM for each ACAT Program at program initiation.

d. Participate in SRs.

e. Develop the RAM–C rationale report.

1–26. Trainer/training developers

The principal T/TD is TRADOC. Other T/TDs include AMC, Medical Command, INSCOM, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, and USACE. To ensure the IPS program fulfills T/TD needs, these T/TDs will—

a. Participate in the PSMIPT and SRs.

b. Determine training (including embedded training) and training device requirements in accordance with the Systems Approach to Training outlined in AR 350–1.

c. Develop or acquire the training capabilities and coordinate analysis and data requirements with other PSMIPT members to ensure integration.

d. Provide complete initial and follow-on training for operation and support of newly fielded materiel and software and for sustained support of fielded materiel and software.

e. Determine and submit system training plans to the Commander, USACE (CEMP–CI) and gaining ACOM, ARNG, ASCC, USAR, and DRU commanders for development of training facility requirements.

f. Conduct training evaluations to assess compatibility between field operations and training, doctrine, organizations, and fielded materiel and software.

g. Provide evaluation, feedback, and lessons learned to doctrine, training, and other appropriate actions to CAPDEVs.

h. Participate in operator and maintainer technical manuals (TM) (including ETM and IETM) verification events to—

(1) Assess the accuracy and effectiveness of TMs (see AR 25–30).

(2) Determine the system impact on institutional and field training programs.

i. The maintainer T/TD is the lead subject matter expert (SME) and Soldier representative for the TM evaluation portion of the LD (see AR 25–30 and AR 350–1).

Chapter 2
Framework

2–1. Integrated product support

The IPS program uses an integrated and iterative process for developing PBPSSs and plans to ensure optimum and best value supportability for materiel and software. The IPS process is an integration of strategic, analytical, and planning activities over the 12 IPS elements.

2–2. Integrated product support elements

a. The IPS process uses 12 IPS elements to facilitate development and integration of the key product support activities required to acquire, test, field, and support Army materiel and software. From the earliest stages of the materiel development, the AS and LCSP will ensure that the requirements for each of the elements of IPS are properly planned, resourced, and implemented. These actions will enable the materiel to achieve the operational readiness levels required by the Soldier at the time of fielding and throughout the life cycle. The 12 IPS elements are:

(1) Product support management.

(2) Design interface.

(3) Sustaining engineering.

(4) Supply support.
(5) Maintenance planning and management.
(6) Packaging, handling, storage, and transportation.
(7) Technical data.
(8) Support equipment.
(9) Training and training support.
(10) Manpower and personnel.
(11) Facilities and infrastructure.
(12) Information technology systems continuous support.

b. All IPS elements must be evaluated and developed, integrated, and related to the systems engineering process. Tradeoffs may be required between elements in order to acquire a materiel that is affordable, operable, supportable, sustainable, transportable, environmentally sound within the resources available, and has the lowest O&S cost.

2–3. Integrated product support process

a. The IPS process is used to—

(1) Introduce and sustain fully supportable materiel and software in current and projected environments that meet operational and system readiness objective at minimum O&S cost.

(2) Plan, program, implement, and execute effective and efficient product support for materiel throughout the life cycle.

(3) Minimize the logistics footprint.
(4) Reduce O&S cost and logistics cycle times.
(5) Reduce duplication of efforts.
(6) Increase RAM.
(7) Apply the systems engineering process to ensure effective product support using PBPSS.

b. The IPS process is a deliberate, unified, and iterative methodology for developing a materiel and software product support strategy that—

(1) Optimizes IPS elements for a materiel.
(2) Leverages existing investments and infrastructure.

c. The IPS process provides a management framework for technical activities.

2–4. Integrated product support process in the acquisition strategy

a. MATDEVs for all acquisition programs, including highly sensitive classified, cryptologic, and intelligence programs, will use the IPS process as a tool to synchronize the PBPSS with the AS.

b. The AS must address all applicable product support statutes including 42 USC, 10 USC 4323, 10 USC 3772, 10 USC 4251, 10 USC. 4252, 10 USC 4171, 10 USC 4321, 10 USC 2460, 10 USC 2461, 10 USC 2464, 10 USC 2466, 10 USC 2469, and 10 USC 2474.

c. The MATDEV will ensure the completed LCSP is synchronized with the AS.

Chapter 3
Integrated Product Support and the Adaptive Acquisition Framework

3–1. Overview

a. The overarching objective of an IPS program is to influence materiel design to reduce support structure requirements, develop the optimal product support package delivered at deployment, and to provide optimal long-term materiel sustainment.

b. The IPS process provides a management framework for technical activities performed concurrently with the systems engineering process, and uses PSA to achieve specific goals within each acquisition work effort and phase. IPS activities are performed throughout each phase to—

(1) Identify and define supportability objectives.
(2) Develop the product support strategy.
(3) Refine sustainment objectives and the product support strategy.
(4) Set sustainment metrics and requirements.
(5) Design-in sustainment features.
(6) Establish the product support package requirements.
(7) Design the product support package.

(8) Develop and demonstrate the product support package.
(9) Implement the product support strategy and package.
(10) Monitor performance and adjust support during operations after materiel fielding.

c. DA Pam 700–127 provides guidance on IPS objectives, goals, and management activities during each phase of the materiel life cycle.

3–2. Capability and product support development

a. MATDEVs are responsible for planning and implementing capability or product support, regardless the adaptive acquisition framework (AAF) pathway. MATDEVs will ensure that passage of a program from one phase or decision to the next occurs only when capability or product support has been adequately planned, developed, and documented.

b. DoDI 5000.02, DoDI 5000.75, DoDI 5000.80, DoDI 5000.87, and DoDI 5000.91 provide policy on capability or product support planning for the AAF pathways.

c. The DoD Product Support Manager Guidebook provides guidance to the PSM to develop and implement a comprehensive product support strategy, regardless the AAF pathway. Essential IPS planning considerations are provided in the following paragraphs.

3–3. Urgent capability acquisition

a. Planning for O&S of an urgent capability acquisition (UCA), to include funding requirements begins during predevelopment and is documented in the AS or simplified acquisition management plan (SAMP).

b. In support of the production and deployment MS, product support planning considerations include how the program manager (PM) will transport, deploy, and sustain the capability. This includes any spares, training, or other support (for example, support equipment, field service representatives, facilities) necessary for O&S.

c. The elements of the product support approach for the UCA needs to achieve desired materiel readiness outcomes and reduce total LCCs if the disposition analysis and determination directs the capability to transition to a program of record (PoR).

3–4. Middle-tier acquisition

a. Product support considerations early-on in the design and development of the middle-tier acquisition (MTA) rapid prototyping (RP) or rapid fielding (RF) pathways reduces risk to achieving operational availability and total ownership costs, specifically if the MTA transitions into another acquisition pathway.

b. The PSM will begin LCSP development during MTA RP resulting in an approved LCSP prior to transition to MTA RF or for initiation of MTA RF if prototyping does not apply. An LCSP for MTA programs meeting the covered system funding threshold, and all other MTA programs, require a tailored LCSP non-covered MTA systems.

c. The product support strategies for MTAs will be tailored using the 12 IPS elements, system and/or operational data, product support and risk analyses, and user feedback where applicable.

3–5. Defense business system

a. The PSM will collaborate with the functional lead to develop the capability support plan ensuring that the defense business system (DBS)'s performance and cost goals are met throughout the DBS's life cycle.

b. The PSM will support change management efforts throughout a DBS's life cycle to address potential implications such as training, manpower, required KSAs, and LCCs.

3–6. Software acquisition pathway

a. Product support management planning for software begins at program inception. Considerations will be made specifically for training, maintenance, and facilities.

b. A software standalone program will utilize a tailored LCSP. When software is embedded with a major capability acquisition (MCA) or MTA program, support strategy for software will be documented in the applicable program's LCSP.

3–7. Major capability acquisition—pre-materiel acquisition

a. IPS implementation begins in the JCIDS process with the evaluation of capabilities. Every materiel is acquired to provide a particular set of capabilities in a specific concept of operations, and sustained to an optimal level of readiness. Understanding user needs in terms of performance is an essential initial step in developing a meaningful product support strategy. Product support planners must be able to understand and forecast requirements to actual sustainment activities and outcomes.

b. The CJCSI 5123.01I and DoDI 5000.91 require that key considerations for sustainment be addressed early in the analysis. A Sustainment KPP is mandatory. Including sustainment planning early during design and procurement enables the requirements and acquisition communities to provide a materiel with optimal availability and reliability to the Soldier at an affordable LCC. The sustainment KPP—

(1) Is derived from materiel's availability requirements to support the required capability, assumptions for its design and operational use, tradeoffs between reliability and cost, and the planned sustainment strategy.

(2) Consists of two primary components: materiel availability and operational availability. Respectively, they provide fleet-wide availability and operational unit availability.

c. Logistics supportability becomes an inherent element of operational effectiveness. The value of the Sustainment KPP is derived from the operational capability requirements of the materiel, assumptions for its operational use, and the planned logistical support. Fully-developed sustainment objectives allow the MATDEV to develop a solution to satisfy Soldier requirements and materiel performance to be measured against standardized metrics.

3–8. Major capability acquisition–materiel solutions and analysis phase

a. The PSM and stakeholders responsible for planning and developing the materiel product support strategy must have early engagement with the CAPDEV. This will ensure that the materiel solution analyses and trade-off decisions consider the IPS elements and the MATDEV's ability to develop and implement a PBPSS, rather than being limited to a transactional support structure.

b. The CAPDEV will establish a PSMIPT that includes the PEO's PSM when the MDD is made. PEOs will assign a PSM to emerging programs. The PSM will be a member of the CAPDEV's PSMIPT to ensure early influence on materiel solution analyses, requirements, trade-offs, and contract IPS requirements.

c. The CAPDEV PSMIPT will develop an initial LCSP prior to MS A.

d. The CAPDEV PSMIPT will plan and develop the product support strategy consistent with sustainment maturity levels (SMLs) 1–4 prior to MS A as follows:

(1) Supportability and sustainment options identified.

(a) Basic supportability and sustainment options identified based on Soldier requirements and operational concept.

(b) Potential support and maintenance challenges due to anticipated technology or operational environment identified.

(2) Notional product support and maintenance concept identified.

(a) Potential product support and maintenance concept alternatives evaluated and notional concept identified as part of the AoA.

(b) User needs and environmental constraints impacting sustainment are identified.

(3) Notional product support requirements defined and documented to support the notional concept. (Occurs in the AoA).

(a) Basic product support, sustainment, and required supportability capabilities identified and documented in programmatic documentation including, but not limited to AoA, AS, ICD, and T&E strategy.

(b) Preliminary sustainment planning, PSA, RAM analysis, used to identify required developmental efforts.

(c) T&E strategy addresses how required enabling technology and KPP and KSAs will be verified.

(4) Supportability objectives and KPP and KSA requirements defined.

(a) New or better technology required for the materiel or supply chain identified (occurs at alternative systems review).

(b) Preliminary sustainment planning, PSA, RAM analysis, used to identify required developmental efforts.

(c) T&E strategy addresses how required enabling technology and KPPs, KSAs, and verifies additional performance attributes.

3–9. Major capability acquisition–technology maturation and risk reduction phase

a. The MATDEV will update the LCSP prior to MS B.

b. MATDEV will plan and develop IPS consistent with SMLs 5–6 prior to MS B as follows:

(1) Supportability design features required to achieve KPP and/or KSA incorporated in design requirements.

(a) Initial materiel capabilities have been analyzed and initial supportability objectives and/or requirements, and initial RAM strategy have been formulated and integrated with the systems engineering process via the systems engineering plan (SEP) and LCSP.

(b) Design features that support the product support strategy, including diagnostics and prognostics, are incorporated into materiel performance specifications. TEMP addresses when and how required sustainment related design features and KPP and/or KSAs will be verified.

(2) Maintenance concepts and product support strategy complete and LCSP is approved.

(a) LCSP written and approved documenting the product support strategy. Supply chain performance requirements identified and documented in the LCSP. Logistics risks identified and risk mitigation strategies identified and documented in the LCSP.

(b) Preliminary product support strategy leveraging a best value mix of organic and contractor support and associated logistics processes, products, and deliverables identified and documented in the LCSP.

(c) Product support contracting strategy, including the extent PBA contracts will be used, documented in the AS.

3–10. Major capability acquisition–engineering and manufacturing development phase

During the engineering and manufacturing development (EMD) phase, the MATDEV will—

a. Update the LCSP prior to MS C.

b. Plan and develop IPS consistent with SMLs 7–8 prior to MS C as follows:

(1) Supportability features embedded in design.

(a) Supportability and Subsystem Maintenance Task Analysis complete (occurs at critical design review (CDR)).

(b) Product support package element requirements are integrated, finalized, and consistent with the approved materiel design and product support strategy.

(c) Validation that the design conforms to support requirements.

(d) Sustainment metrics are predicted based on CDR results, the approved product support package element requirements and projected supply chain performance.

(2) Product support capabilities demonstrated and supply chain management approach validated.

(a) Product support planning complete; identifying the product support strategy roles, responsibilities, and partnerships that will be implemented.

(b) Product support capabilities (including associated logistics processes and products) tested and demonstrated.

(c) Supply chain performance validated.

(d) Budget requirements are adjusted based on the design and test results.

3–11. Major capability acquisition–production and deployment phase

a. The MATDEV will update the LCSP prior to the full-rate production (FRP) and/or full deployment decision review.

b. MATDEV will plan and develop the product support package consistent with SMLs 9–10 as follows:

(1) Product support package demonstrated in operational environment. (Occurs at initial operational test and evaluation (IOT&E).)

(a) Representative product support package fielded to support operational tests.

(b) Product support capabilities (including associated logistics processes and products) demonstrated through successful tests and demonstrations in an operational environment.

(c) Plans are developed and implemented to address any issues or weak spots identified in IOT&E.

(2) Initial product support package fielded at operational sites. Performance measured against availability, reliability, and cost metrics.

(a) Support systems and services delivered to each category of operational site.

(b) Product support capabilities (including associated logistics processes and products) proven in an operational environment.

(c) Product support measured against planned materiel availability, materiel reliability, ownership cost and other sustainment metrics important to the Soldier.

(d) Take needed improvement actions based on performance data.

3–12. Major capability acquisition–operations and support phase

a. The MATDEV will update the LCSP.

b. MATDEV will develop and implement the product support package consistent with SMLs 11–12 as follows:

(1) Production and deployment (post-MS C) and O&S performance measured against operational needs.

(a) Product support improved through continual process improvement.

(b) Product support performance regularly measured against sustainment metrics and corrective actions taken.

(c) Product support package and sustainment processes are refined and adjusted based on performance and evolving operational needs.

(d) Initiatives to implement affordable materiel operational effectiveness are implemented.

(2) Production and deployment (post-MS C) and O&S and support product support package fully in place including sustainment-level maintenance capability. Occurs at full operational capability (FOC).

(a) Support systems and services delivered and fully integrated into the operational environment.

(b) Sustainment-level maintenance performed.

(c) Product support performance measured against sustainment metrics and corrective actions taken.

(d) Product improvement, modifications, upgrades planned.

(e) The product support strategy is refined leveraging the best value mix of organic and contractor support for logistics processes, services, and products.

(f) Equipment retirement/disposal planning is implemented, as required.

3–13. Acquisition of services

a. The PSM or life cycle logistician supports the PM in the planning, strategic sourcing, management, and oversight of product support equities in contracts for services. The PM and PSM (or the life cycle logistician, when a PSM is not assigned) use the services acquisition pathway to support enterprise solutions for logistics products in order to implement efficiency, reduce costs, and eliminate redundancy. The PSM will participate in acquisitions for services in accordance with DoDI 5000.74 and DoDI 5000.91.

b. An LCSP is not required for acquisition of services.

Chapter 4
Product Support Management

Section I

Strategic Approach and Risk Management

4–1. Performance-based product support strategies

MATDEVs will develop PBPSS that deliver performance outcomes that meet CAPDEV requirements.

a. The PSM is responsible for developing and implementing the PBPSS for the MATDEV and documenting it in the LCSP. The PSM will also provide a PBPSS summary input for inclusion in the AS which includes the intellectual property (IP) strategy.

b. All PBPSSs will be developed to ensure that reliability, readiness, and cost are optimized through a balanced use of appropriate government (organic), public-private partnership (PPP), and contractor support.

c. All performance-based contractor support arrangements (performance-based logistics) will provide financial incentives to industry to deliver needed reliability and availability at reduced cost by encouraging and rewarding innovative cost reduction initiatives.

d. The Army preference is that all PBPSSs will leverage existing organic product support capabilities to the maximum extent possible while other non-organic support alternatives are considered.

e. PBPSSs can include TMs, national maintenance work requirements (NMWRs), depot maintenance work requirements (DMWRs), and troubleshooting and repair procedures as performance measurements.

f. PBPSSs may be implemented on materiel at system level, subsystem level, secondary items, components, assemblies, or subassemblies.

g. The PBPSS will be validated by an APSA showing that the product support alternative(s) selected will meet the CAPDEV requirements as identified in the CRD and supports the Army's goal for minimizing O&S costs.

h. All PBPSSs will—

(1) Enhance the commander's ability to execute missions.

(2) Identify and document in the IP strategy the Government's minimum needs for the technical data, computer software documentation, computer software, and license rights. Consider including availability and delivery of identified data and rights as a source selection evaluation factor.

(3) Provide IPS input to the IP strategy prior to MS A. Disclose as much detail as practicable about the Army's intended product support strategy. This should include information about the Army's intended sustainment needs and the broad categories of data required for reset, repair, and other maintenance of the system.

(4) Support total asset visibility.

(5) Comply with DoD policy to use the Defense Transportation System.

(6) Use standard Army Logistics Information Systems.

(7) Assess the short- and long-term needs for data and license rights consistent with the spirit of 10 USC 3771, DoDI 5000.02, and DoDI 5000.75. Document the assessment in the program's IP strategy, which should be developed and updated before the issuance of a contract solicitation.

i. All PBPSSs will be executed through a combination of the following methods—

(1) Organic support as defined by LPD (TMs, DMWRs, NMWRs, troubleshooting, and repair procedures).

(2) Performance-based contracts with industry to include PPP.

j. All PBPSS will include metrics to measure performance outcomes—

(1) Metrics required for all PBPSSs—

(a) Sustainment KPP with two subcomponents: materiel availability and operational availability.

(b) Reliability KSA.

(c) O&S cost KSA.

(d) Mean down time.

(e) Logistics footprint.

(2) Other metrics tailored to each program, as required.

4–2. Legacy materiel

The DA Pam 700–127 provides guidance for legacy materiel where developing a PBPSS may not be feasible because of a program's maturity and investments already made in a product support structure.

4–3. Supportability risk management

a. MATDEVs will implement management of supportability risk as an integral part of the program risk management plan to identify—

(1) Supportability risks, to include supply chain risks.

(2) Product support requirements to meet exit criteria for acquisition programs.

b. Supportability exit criteria will be considered coequal with cost, schedule, technical performance and supportability constraints, and critical to sustainment of the materiel and software.

c. MATDEVs must coordinate potential exit criteria with other members of the acquisition community.

Section II

Organization

4–4. Product support manager

PSMs are required for all MTA programs, in addition to all programs following the MCA pathway. For all other programs, PSMs are encouraged but PMs will assign at a minimum a life cycle logistician. The PSM/life cycle logistician is responsible for managing the package of support functions required to field and maintain the readiness and operational capability of materiel and software. This includes all functions related to readiness, in support of the MATDEV's life cycle management responsibilities.

a. Following the MDD, PEOs will assign a PEO PSM to participate in the CAPDEV's PSMIPT. The PEO assigned PSM is responsible for assisting the CAPDEV with IPS analyses, AoA, developing IPS contract requirements, developing the initial LCSP, and other CAPDEV activities until the PEO assigns a MATDEV. The PEO PSM will—

(1) Serve on PSMIPT chaired by the CAPDEV.

(2) Participate in pre-MS B activities with the CAPDEV.

(3) Participate in the development of the CRD, and prepare or review all other acquisition program documentation to ensure that all IPS considerations are adequately defined.

(4) Support the CAPDEV with the development of the initial LCSP. Use results from the AoA in development of the initial LCSP.

(5) Conduct appropriate PSA with the CAPDEV.

(6) Ensure the CAPDEV considers requirements for access, and later delivery of technical data and computer software, and rights in technical data and software required to support the materiel and software sustainment.

b. Prior to MS B, PEOs will assign a MATDEV PSM for each ACAT Program prior to, but no later than, program initiation. The PSM is a direct report to the MATDEV, PSM performance will be rated by the MATDEV (this responsibility will not be delegated).

c. PEOs will ensure that PSMs are formally mentored by senior PEO staff and MATDEVs with focus on broader understanding of executive experiences, problems and solutions, and other discussions that target the PSM's leadership and professional growth.

d. The PSM will be a key leadership position for ACAT I programs, and a critical acquisition position for ACAT II and III programs.

e. The PSM is directly accountable to the MATDEV and will be in a life cycle logistics position on the PEO's TDA. All PSMs will be assigned on TDAs as a logistics management specialist 0346, and on a PSM position requirements description. The PSM requirements will not be waived.

f. The PEOs will ensure that PSMs are selected in accordance with the guidance in DA Pam 700–127.

g. PEOs and MATDEVs will ensure that PSMs continue their professional development to include program management, contracting, and business-financial management Defense Acquisition Workforce Improvement Act training.

h. The PSM will—

(1) Provide materiel product support expertise to the MATDEV in the execution of their life cycle management duties (see DoDD 5000.01 and DoDI 5000.91).

(2) Participate in working groups and IPTs for:

(a) Systems engineering.

(b) T&E.

(c) Should cost.

(d) O&S cost estimates.

(3) Provide IPS input to the IP strategy prior to MS A.

(4) Conduct business case analysis (BCA) to determine opportunities where it is operationally and economically feasible to implement PBPSSs and will—

(a) Use the analysis to validate the assumptions used to develop PBPSSs.

(b) Develop the BCA through the PSMIPT.

(c) Review BCA prior to each change in the PBPSS or every 5 years, whichever occurs first, and update as required. Updates to the BCA will be coordinated only when there are significant changes to the PBPSS.

(5) Participate in market investigation (MI) for commercial items and NDIs and—

(a) Recommend support concepts to the MATDEV.

(b) Use results of the MI to develop the support concept.

(c) Include relevant MI data in O&S cost estimates.

(6) Ensure supportability goals and constraints are included in the performance specification.

(7) Include the short-term and long-term needs for technical data, computer software (including source code), computer software documentation, commercial computer software licenses, and the associated license rights to use that data for the Government's intended purposes in the IP strategy (part of the AS), LCSP, and solicitation documents.

(8) Participate in source selection criteria development and source selection boards.

(9) Develop, update, and implement the following:

(a) Comprehensive PBPSSs. Conduct periodic PBPSS reviews and adjust where necessary.

(b) Document the PBPSS and all requirements to implement the strategy in the LCSP.

(c) Performance-based outcome metrics to assess effectiveness of the PBPSS.

(d) As delegated by the PM, customize the IP strategy to meet the specific needs of the program. Articulate the custom set of data and rights needed to support the program instead of assuming the need for broad data and rights. Consider how the Army's rights or IP strategy should change over time and over the program's life cycle.

(e) LCC analysis.

(f) RCM analysis.

(g) Failure mode effects and criticality analysis (FMECA).

(h) Fault tree analysis.

(i) Level of repair analysis (LORA).

(j) CLA.

(k) CDA.

(l) DSOR analysis.

(m) Provisioning analysis and provisioning technical documentation.

(n) Equipment publications (to include TMs, ETMs, and IETMs), maintenance allocation chart, repair parts and special tools list (RPSTL). DMWRs and NMWRs.

(o) Corrosion prevention and control plan.

(p) Depot maintenance support plan (DMSP).

(q) Replaced system sustainment plan (RSSP) (MDAP only).

(r) System demilitarization (DEMIL) and disposal plan.

(s) Preservation and storage of unique tooling (MDAP only).

(t) Materiel fielding plan.

(u) New equipment training (NET) plan.

(v) Plan for materiel release.

(w) Post-production support plan.

(x) Item unique identification plan (see AR 700–145).

(y) Transition to sustainment (T2S) plan.

(z) Post-fielding support analysis (PFSA).

(aa) Diminishing manufacturing sources and material shortages (DMSMS)/obsolescence plan.

(bb) Human systems integration plan.

(cc) Programmatic environment, safety, and occupational health (ESOH) evaluation.

(10) Develop basis of issue plan feeder data (BOIPFD).

(11) Identify all IPS resource requirements and submit for the program objective memorandum (POM) and SR.

(12) Periodically assess resource allocations and performance requirements. Adjust performance requirements and resource allocations across PSIs and PSPs as necessary to optimize implementation of the product support strategy.

(13) Promote opportunities to maximize competition in contracting while meeting the objective of best-value long-term outcomes to the Soldier. Balance use of DoD and industry resources via stable and robust PPPs.

(14) Ensure the product support strategy maximizes small business participation at the appropriate tiers.

(15) Ensure that product support arrangements for the materiel describes how such arrangements will ensure efficient procurement, management, and allocation of government-owned parts inventories in order to prevent unnecessary procurements of such parts.

(16) Identify DMSMS/obsolete parts that are included in the materiel specifications for the program and approve suitable replacements.

(17) Assure achievement of desired product support outcomes through development and implementation of appropriate PBAs. Review PBAs and contracts periodically and ensure they are consistent with the product support strategy.

(18) Oversee execution of PBAs. PSMs may assign a government employee as a PSI to perform daily management of PBAs and contracts under their oversight.

(19) Seek to leverage enterprise opportunities across programs and DoD components.

(20) Use appropriate analytical tools and conduct appropriate cost analyses, including cost-benefit analyses as specified in OMB Circular A–94 to determine the preferred PBPSS.

(21) Ensure materiel integration (see AR 770–3).

(22) For ACAT I programs—

(a) Coordinate with the COE to begin preparation of the SFA for ACAT I programs no later than MS B.

(b) Submit the LCSP to COE (DAEN–CRST) for development or update of the SFA and facility standards and criteria.

(23) When the MATDEV is assigned, but no later than MS B, assume chairmanship of the PSMIPT from the CAPDEV PSMIPT lead.

(24) The PSM may serve as the MANPRINT manager and will (see AR 602–2)—

(a) Develop and update the system MANPRINT management plan.

(b) Ensure MANPRINT assessments and updates are obtained from the Army Research Laboratory to support milestone decision reviews (MDRs) and support major modifications to the materiel and software.

(25) Coordinate Army working capital fund (AWCF) requirements with the servicing life cycle management commands (LCMCs).

4–5. Product support integrator

a. The PSM may designate a PSI to perform daily management of PBAs under the PSM's oversight. The PSI will report and be accountable to the PSM. The PSI will provide periodic status to the PSM (in accordance with the PSM's direction) on the PSP's execution and compliance with PBA requirements. PSIs will be government employees where PSI duties are inherently governmental and may be provided under a matrix support agreement. The government PSIs will normally be AMC matrix personnel. Government PSIs may be either collocated with the MATDEV or noncollocated depending on the assigned PSI management responsibilities. Government PSIs will be highly qualified in the discipline for their assigned responsibilities.

b. The AMC is the Army's PSI for the organic materiel enterprise and will—

(1) Develop PBAs between AMC subordinate organizations in support of the MATDEV's PBPSS and performance metrics.

(2) Oversee PBA execution by AMC subordinate organizations—

(a) Resolve PBA issues.

(b) Provide status to the MATDEV's PSM in accordance with the PSM's reporting requirements.

c. PSIs may be contractors where PSI responsibilities are not inherently governmental, and are defined in a contract PBA.

4–6. Product support provider

The PSM will maintain oversight of the product support functions performed by PSPs. The PSM may designate a PSI to maintain oversight of PSP daily activities at the PSM's discretion. The PSP function may be performed by a government entity or contractor.

4–7. Product support management integrated product team

The PSMIPT is a collaborative working body comprised of key program stakeholders whose purpose is to plan, develop, and implement PBPSSs under the leadership of the PSM.

a. The CAPDEV will designate an IPS lead that will establish and chair a PSMIPT during the Materiel Solution Analysis Phase for all acquisition programs. This PSMIPT will conduct initial PSA and coordinate overall IPS planning and execution.

b. When the MATDEV is assigned, but no later than MS B, the MATDEV's PSM will assume the responsibility to chair the PSMIPT.

c. The PSMIPT will—

(1) Align their IPS efforts with the AS, SEP, and TEMP.

(2) Develop performance-based product support concepts, related program documentation, APSAs, and conduct supportability and tradeoff analyses to determine the optimum PBPSS.

(3) Ensure that PSMIPT member roles and responsibilities are included in the LCSP.

(4) Participate in development of the—

(a) LCSP.

(b) IP strategy.

(5) Provide recommendations to the PSM.

d. Membership will include representatives from—

(1) PEO or MATDEV (PSM and other functional areas within the PEO or MATDEV organization).

(2) LCMCs.

(3) Supporting depot(s) and government software maintenance organizations.

(4) CAPDEVs representative from all applicable TRADOC schools.

(5) DLA.

(6) COE.

(7) Army Life Cycle Logistician (DASA (S)) for ACAT I, ACAT II, and special interest programs where the MDA is the Defense Acquisition Executive (DAE) or the AAE.

(8) Testers and test evaluators.

(9) Army Research Laboratory.

(10) Surface Deployment and Distribution Command.

(11) U.S. Army Force Management Support Agency (USAFMSA) for—

(a) Publishing BOIPFD based on data received from the MATDEV.

(b) Manpower requirements criteria (MARC) data development.

(12) Other participants, as required:

(a) Additional logistics SMEs.

(b) Designated representatives from each of the participating services (when the Army is the lead service in multi-service acquisition programs).

(c) A security assistance representative, on an ad hoc basis, when it is anticipated that there is a potential for international interest (for example, foreign military sales or international cooperation).

(d) Participation of appropriate commands and agencies will be determined based upon materiel complexity and requirements, for non-ACAT I and II systems.

(e) PSIs when PBAs are implemented.

(f) Coordination with other functional groups, such as the T&E WIPT and the Training Support Work Group to ensure an integrated effort.

4–8. Army integrated product support executive committee

The AIPSEC is the DA's senior forum for representatives of Army organizations to plan, discuss, and resolve IPS and supportability policy issues, concerns, and procedures. The AIPSEC is chaired by the Director of Life Cycle Logistics Policy who reports to DASA (S).

a. The AIPSEC provides advice and counsel to the DASA (S) regarding development and implementation of Army IPS policy.

b. Membership will include representatives that are in the rank of colonel or civilian equivalent from—

(1) PEOs.
(2) AMC.
(3) LCMCs.
(4) CAPDEVs.
(5) DLA.
(6) COE.
(7) Testers and test evaluators.
(8) Surface Deployment and Distribution Command.
(9) USAFMSA.
(10) Other participants, as required.

c. The Director, Life Cycle Logistics Policy, will identify appropriate members to attend each AIPSEC based on the agenda. Member attendance will be limited to those identified by the Director, Life Cycle Logistics Policy.

Section III

Integrated Product Support Management of Joint Programs

4–9. Joint programs and Joint logistics

MATDEVs will assign a PSM to Joint programs.

4–10. Lead Service product support managers

When the Army is the lead Service for a Joint program, the Army PSM will have overall responsibility for coordinating with other Service PSMs and developing and implementing a PBPSS.

Section IV

Implementing Performance-Based Product Support Strategies

4–11. Metrics

a. MATDEVs will develop appropriate performance-based metrics for all PBAs. Minimum metrics required in all PBAs are—

(1) Sustainment KPP with two subcomponents: materiel availability and operational availability.
(2) Reliability KSA.
(3) O&S cost KSA.
(4) Mean down time.
(5) Logistics footprint.
(6) Other metrics tailored to each program, as required.

b. Measurable performance outcome metrics focused on cost control and cost management will be included in all PBAs. Metrics should be established in a hierarchy of a limited number of appropriate high level metrics, with other subordinate metrics to provide visibility of performance cost drivers. Metrics may be tailored according to what is appropriate for performance and cost visibility. Performance metrics in PBAs should reflect only performance that is needed, and should not reflect more performance than required. Metrics exceeding the requirement may drive increased cost and may not improve overall materiel system readiness.

c. The primary metric for AWCF items is stock availability. PBAs will neither pay for stock availability rates greater than what is defined in AR 710–1, nor incentivize the PSP to exceed regulatory goals. Metrics in PBAs exceeding stock availability rates defined in AR 710–1 in support of contingency operations are to be agreed upon by the MATDEV and supporting LCMC. PEOs will ensure that MATDEVs in cooperation with the appropriate LCMCs review existing secondary item PBAs for opportunities to—

(1) Implement metrics that support the needed performance requirements and enable effective cost management and control.
(2) Reduce supply chain management costs.
(3) Eliminate duplication of support currently available through the organic supply chain management infrastructure. In instances where additional nonorganic supply chain support is required, the APSA must include justification for the additional supply chain management costs and readiness impacts that clearly support a capability not currently available.
(4) Evaluate PBA requirements when the APSA is revised and adjust the contract as required.

d. Additional metrics are identified in DA Pam 700–127.

4–12. Performance-based arrangements

a. A memorandum of agreement or memorandum of understanding between the MATDEV and government entities may be used to facilitate implementing the PBPSS. This will be at the MATDEV's discretion.

b. When contractors are used to implement the PBPSS the MATDEV will enter a PBA through a contract. The contract may include use of the contractor as a PSP or PSI. However, MATDEVs requiring PSI duties that are inherently governmental will use only government employees as the PSI.

c. All PBAs must include appropriate—

(1) Requirements aligned to the CRD and clearly defined performance outcomes.

(2) Performance-based metrics.

(3) Incentives that—

(a) Align with required performance outcomes.

(b) Deliver needed reliability and availability at reduced total cost.

(c) Encourage and reward innovative cost reduction initiatives.

(4) Technical data required to execute the arrangement.

d. The requirements cited in the approved LCSP will be the PBA between the CAPDEV and MATDEV.

Section V

Contract Performance-Based Arrangements

4–13. Requirements

a. MATDEVs will ensure that PBAs state all requirements in clear, specific, and objective terms and include provisions for—

(1) Technical data, computer software (including source code), computer software documentation, commercial computer software licenses, and the associated license rights to that data for the Government's intended use to be ordered, secured, and acquired to permit competitive procurement.

(2) PSA to be performed in accordance with SAE–TA–STD–0017.

(3) LPD resulting from PSA to be provided in accordance with SAE–GEIA–STD–0007.

b. All contract PBAs must include appropriate—

(1) Requirements aligned to the CRD and clearly defined performance outcomes.

(2) Performance-based metrics.

(3) Incentives that—

(a) Align with required performance outcomes.

(b) Deliver needed reliability and availability at reduced total cost.

(c) Encourage and reward innovative cost reduction initiatives.

(4) Technical data, computer software (including source code), computer software documentation, commercial computer software licenses, and the associated license rights to that data for the Government's intended use required to—

(a) Execute the arrangement.

(b) Support future competition.

c. MATDEVs will ensure that all requirements are stated in all requests for proposal (RFPs) and PBAs, and that appropriate DD Forms 1423 (Contract Data Requirements List) (hereafter referred to as CDRL) are included to ensure that the Government will receive contract deliverables.

4–14. Public-private partnerships

The Army's preference is to develop PPPs when organic capability cannot support all IPS requirements (10 USC 2474). MATDEVs are to develop their PBPSSs with the goal of optimizing PPP arrangements that balance DoD organic and commercial logistics support capabilities. MATDEVs will maximize use of PPP contracts before selecting contractor logistics support (CLS) alternatives.

4–15. Contractor logistics support (nonpublic-private partnership support)

a. CLS is a support strategy to be used only when support cannot be provided by PPP arrangements and is in the best interest of the Government based on appropriate analysis. CLS will be used only when the selection of alternatives through PSA, the APSA, and LCSP support a CLS determination.

b. The three forms of CLS are—

(1) Interim contractor support (ICS) applies only to acquisition programs initiated under an approved ICD or CDD. ICS is a finite bridging strategy until the objective support identified in the LCSP is fully operational. The Army goal for transitioning from ICS to the objective support is no longer than 3 years from the start of ICS, unless applicable to an MTA with a planned transition to a PoR. Normally ICS is funded with procurement appropriation. ICS does not apply to a UCA.

(2) LCCS is a business decision for long-term contract support for acquisition programs. The option to use LCCS in lieu of PPP or organic support is determined by the PBPSS and validated by an APSA. LCCS provides all or part of a materiel's IPS support throughout the materiel life cycle. To ensure compliance with 10 USC 2464, MATDEVs will not apply LCCS to depot maintenance workload associated with required core depot capabilities. When LCCS is selected as the PBPSS, MATDEVs will review the cost effectiveness of the LCCS every 5 years to validate continued use of LCCS in lieu of organic or PPP product support. Review will be based on applicable metrics and performance under the LCCS contract. Validation for continued use of LCCS will be documented by an update to the LCSP. Should review indicate continuance of LCCS, the MATDEV will solicit competition for follow-on contracts.

(3) CLS supporting UCA. This applies to the support of UCA as a sustainment strategy until the materiel is either determined to be an acquisition program and an ICD or CDD is approved; or the UCA capability is sustained or terminated based on Army DCS, G–8 guidance. Investment in a permanent support infrastructure is not justified until the final decision for the UCA is made. Major UCA is defined as meeting the criteria for an ACAT I or ACAT II program in DoDI 5000.85. When major UCA is acquired and supported by CLS, within 5 years of fielding, a product support assessment team will convene to review support options, to include PPP and organic support, with emphasis on reducing cost. The team is chaired by the MATDEV, or their designee. The team includes the PSM and other appropriate program office personnel, and participation by representatives from—

(a) DCS, G–3/5/7.

(b) DCS, G–4.

(c) DCS, G–8.

(d) AMC.

(e) TRADOC.

c. MATDEVs will develop materiel that does not require routine assignment of contract support personnel on the battlefield. If this is not possible, then the requirement for contract support personnel on the battlefield must be minimized and well justified in accordance with AR 715–9.

4–16. Contract management

The MATDEV, in coordination with the CG, AMC, is responsible for centralized contractor support management, including programming, budgeting, contract negotiations, contract award, and administration. MATDEVs will ensure that all contracts—

a. Are consistent with the program's IP strategy. Negotiate appropriate license rights (through the applicable contracting officer or agreements officer) to obtain the technical data, computer software documentation, or computer software required to support the program. When negotiation is not appropriate, include in the IP strategy a written justification supporting that position. The MDA will determine if the justification is sufficient. Do not seek rights to more extensive data than is necessary.

b. Are operationally executable and do not infringe on the commander's ability to execute missions.

c. Comply with Army policy on contractors accompanying the force set forth in AR 715–9.

d. Include appropriate performance-based metrics and performance measurement criteria.

e. Limit the use of contractors for maintenance of field materiel that can be maintained by Soldiers.

f. Integrate contractor support with standard Army logistics and information systems.

g. Include a wartime contingency clause in the support contract that requires continuation of contractor support in wartime scenarios and contingency operations. The contract clause must require contractors to ensure a seamless and transparent transition from in-garrison to deployment support.

h. Identify data necessary to be provided to the Government by the contractor (such as defective or nonconforming parts (counterfeit parts), task frequency, parts usage and repair times at each maintenance level, mean units between maintenance events, engineering changes, skills and training needed, bills of material needed for proactive DMSMS planning, technical publications, and LPD and PSA data).

i. Ensure that contractors or subcontractors are fairly compensated for technical data, computer software documentation, computer software, and license rights for Government use of contractor-owned IP.

j. Ensure the Army is fairly compensated for contractor use of Army-owned IP.

(1) In accordance with AR 70–57, Army labs and centers can enter into exclusive, nonexclusive, and partially exclusive license agreements with industry partners to generate revenue for Army-owned IP.

(2) Army organizations, including labs, depots, arsenals, ammunition plants, and life cycle software engineering centers, will develop an IP management approach for use of Army-owned IP generated by their organizations (for example, inventions, technical data packages, and software) so that the Army may receive royalties or discounts may be applied to systems bought by the Government. The value of government IP should be factored into contract negotiations as a form of consideration exchanged between parties, as appropriate.

4–17. Planning

a. When ICS is used, the MATDEV will ensure that the LCSP reflects the justification for ICS, the ICS MSs and duration, plan for transition from ICS to the objective support concept and available funding. ICS is to be used only for the length of time specified in the LCSP.

b. The MATDEV will conduct SR at the completion of each of the major MSs to assess the status of transitioning to the objective support concept.

4–18. Reprocurement

Policy on executing reprocurement or rebuy for materiel is in AR 70–1.

Chapter 5
Design

5–1. Design interface

As part of the systems engineering process, the MATDEV will establish design interface parameters to influence the design of the materiel, including the product support structure associated with the materiel and software. The MATDEV will—

a. Develop quantifiable and measurable goals or constraints as part of the requirements formulation process.

b. Select a design that will minimize—

(1) Resources required for materiel software O&S.

(2) The overall logistics footprint for the Army.

(3) Corrosion impacts to include integration with other materiel developed by other MATDEVs.

c. Consider stakeholder requirements, impacts to product support, and potential impacts to other IPS elements when conducting analyses and trade-offs.

d. Use reliability and maintainability as an essential part of design interface.

e. Coordinate requirements limitations with the CAPDEV and document them in the LCSP.

f. Perform maintainability and supportability modeling to identify supportability drivers, simulate maintenance downtime, and analyze resources required for materiel and software sustainment.

g. Consider MANPRINT processes (see AR 602–2).

5–2. Design for energy efficiency

MATDEVs will, through the PSA process, assess, identify, and maximize energy efficiency opportunities at the platform level during all phases of the acquisition process. The PSA process must include an energy efficiency assessment that includes reviews of the materiel being replaced by the new materiel (or similar materiel when there is no replaced materiel).

a. The operational effects on energy logistics must be included in the trade space for any new materiel that uses energy.

b. The PSA must consider fuel and electric power demand for materiel, including those for operating “off grid” for extended periods when necessary, consistent with future force plans and Integrated Security Constructs.

5–3. Maintenance task design parameters

Speed and ease of repair in the forward battlefield area is a key design parameter for all Army equipment. The MATDEV will ensure that the maintenance task design—

a. Maximizes commonality and interoperability, and minimizes requirements for materiel unique parts.

b. Includes open systems architecture to facilitate future upgrades, modifications, and technology insertion.

c. Minimizes requirements for tools and test equipment.

d. Requires standard Army sets, kits, outfits, and tools (SKOT) and test, measurement, and diagnostic equipment (TMDE) to meet maintenance requirements.

e. Minimizes complexity of repair tasks, skill levels, and training required.

f. Includes design for testability and rapid repair.

g. Includes battlefield damage assessment and repair techniques that are easy to implement.

h. Addresses corrosion prevention, counterfeit parts prevention, and mitigates obsolescence and DMSMS.

5–4. Condition-based maintenance plus in the design

a. CAPDEVs will require CBM+ capabilities in all new equipment weapon systems and information systems CRDs as part of a strategy to accelerate the transformation of existing maintenance processes, and technology insertion to keep pace with rapid changes made in the commercial marketplace.

b. MATDEVs will—

(1) Develop maintenance strategies to conduct services based on equipment condition or evidence of need and eliminate time-based intervals, where possible.

(2) Incorporate CBM+ concepts and technologies in the design and development of new equipment, major weapon systems, and planned upgrades where it is feasible and cost effective based on a cost-benefit analysis conducted by the MATDEV.

(3) Execute CBM+ contract requirements.

(4) Utilize the ABCD interface requirements specification as a common data migration specification for engineering and parametric data collected from on-platform sensors.

(5) Deliver all CBM+ data in ABCD format to the LIW. ABCD is the Army standard.

5–5. Design for manpower and personnel integration

a. MATDEVs will provide support to the MANPRINT program during the materiel development to ensure that human capabilities and limitations are addressed (see AR 602–2). MANPRINT is the Army's implementation of a management and technical human systems interface program required by DoDI 5000.95. MANPRINT recognizes the fact that the human is an integral part of the total system and must be considered throughout the life cycle of the materiel. The seven MANPRINT domains are—

(1) Manpower.

(2) Personnel.

(3) Training.

(4) Human factors engineering.

(5) System safety.

(6) Health hazards.

(7) Soldier survivability.

b. The system MANPRINT management plan and MANPRINT assessments are required to support each MDR and major materiel changes.

5–6. Design for standardization and interoperability

MATDEVs will develop a standardization and interoperability management process to ensure the materiel design and software achieves the most efficient use of the total Army and DoD resources, and that the Army can effectively and efficiently participate in combat, contingency, and operations with other military services and allied forces.

5–7. Design for environment, safety, and occupational health

a. MATDEVs will, through PSA, assess, identify, and minimize ESOH hazards during all phases of the acquisition process. The PSA process must include an environmental risk assessment that includes reviews of the materiel being replaced by the new materiel (or similar materiel when there is no replaced materiel) to include environmental assessments performed for each materiel.

b. Material used or proposed for use in new materiel will be checked against the toxic release inventory list from 42 USC Chapter 116. MATDEVs will conduct studies to find substitutes for any material found on the list that is used or proposed to be used. Justification must be provided for continued use of materials on the list (see AR 200–1).

c. When ammunition is to be used, the MATDEV will—

(1) Study the DEMIL and explosive ordnance disposal aspects of the munitions required.

(2) Concurrently develop of DEMIL and explosive ordnance disposal procedures and the equipment for the materiel.

(3) Ensure insensitive munitions criteria have been addressed, deferred, or waived.

d. MATDEVs will develop a product stewardship strategy when the materiel design begins to factor in ESOH considerations.

5–8. Design for corrosion resistance
The PSM and PSMIPT will, in coordination with systems engineering, T&E, and the MATDEV staff, will influence the corrosion resistance of materiel through the identification of design features that would reduce LCC while increasing availability.

5–9. Supply Management Army–Operations and Support Cost Reduction Program
MATDEVs will maximize opportunities to use the Supply Management Army–Operations and Support Cost Reduction Program to reduce O&S costs by introducing reliability improvements in their legacy supply class IX items.

5–10. Commercial and nondevelopmental items market investigation
a. MATDEVs will ensure that supportability planning for commercial items and NDIs is an integral part of the MI.

b. When commercial or NDI solutions are available following the MI, MATDEVs will—

(1) Use PSA and MANPRINT to determine if modification is required for the commercial or NDI.

(2) Tailor the commercial or NDI acquisition program when appropriate to lower LCC.

(3) Ensure that the necessary technical data, computer software (including source code), computer software documentation, commercial computer software licenses, and the associated license rights to use the data for the Government's intended purpose is available to execute organic support and sustainment of the NDI.

Chapter 6
Integrated Product Support Analysis and Software Tools

6–1. Requirement
All PSMs are required to conduct IPS related analyses for the MATDEV to ensure supportability of the materiel and software is adequately addressed. Technical performance, cost, schedule, and supportability will be considered coequal in importance.

6–2. Product support analysis and logistics product data
a. Supportability is a design characteristic. The PSM will perform PSA within the framework of the systems engineering process (see SAE TA–STD–0017 and MIL–HDBK–502). PSMs will integrate PSA activities as part of the systems engineering IPT and identify the PSA activities in the SEP. PSA will—

(1) Begin early in the program and continue throughout the materiel and software design, to include materiel changes throughout the life cycle.

(2) Establish performance-based support-related requirements.

(3) Provide a means to perform tradeoffs among these requirements and the materiel and software design.

b. Examples of analyses, strategies, and methods addressed by PSA includes the following:

(1) Failure mode and effects analysis.

(2) FMECA.

(3) Fault tree analysis.

(4) LORA (see SAE–AS1390).

(5) Maintenance task analysis.

(6) RAM analysis.

(7) RAM–C rationale reporting (see DoD RAM–C Report Manual).

(8) RCM.

(9) APSA.

(10) DMSMS (see TECHAMERICA–STD–0016).

(11) PFSA.

(12) ILA.

(13) Manpower analysis.

(14) O&S cost estimating.

(15) Supply chain management.

c. LPD is a product of PSA and consists of the support and support-related engineering and logistics data acquired from contractors. Acquire LPD through contracts using SAE–GEIA–STD–0007. Use SAE–GEIA–HB–0007 for additional guidance. Review, validate, and deliver LPD to the Army Logistics Product Data Store (LPDS).

6–3. Analysis of product support alternatives

a. An APSA is an analysis that aids the MATDEV when considering cost, benefits, and risk of potential product support alternatives and is approved by the MDA. The APSA will be used to determine opportunities where it is operationally and economically feasible to implement alternatives or changes to a PBPSS that enhances costs and benefits while considering risk, and will support the MATDEV's PBPSS decision process. The PSM is responsible for recording the results of an APSA as an annex to the LCSP. All APSAs are required to—

(1) Be performed in a cost effective and efficient manner.

(2) Align the level of effort with the complexity and cost of the MATDEV program.

(3) Have sufficient detail to inform the MATDEV of costs, benefits, and risk.

(4) Include clearly defined and measurable, product support performance outcome(s) that meet CAPDEV requirements defined in the CRD.

(5) Include a performance-based alternative in the analysis.

(6) Align with the requirements in the IP strategy.

(7) Assess to what extent each product support alternative fulfills strategic objectives of the program—

(a) Compliance with product support performance measures and metrics.

(b) Impact on stakeholders.

b. The PSM is responsible for conducting APSAs for non-AWCF funded items.

c. The AMC will develop APSAs for AWCF items—

(1) The PSM will provide a list of potential AWCF depot level reparables (DLRs) to the AMC to evaluate.

(2) The AMC will provide to the PSM within 90 days following receipt of the AWCF DLR candidate items list—

(a) Recommendation for AWCF DLRs.

(b) The completed APSA.

d. The PSM will incorporate results of the AWCF decisions and any resulting APSAs in an annex to the LCSP.

e. When APSAs are conducted by a third party, the MATDEV will ensure that data rights, supporting documentation, and required copies of the APSA are obtained from the third party.

6–4. Life cycle cost analysis

PSMs will conduct LCC analysis to support trade-off decisions that have impact to O&S costs.

6–5. Reliability centered maintenance analyses, failure mode, effects, and criticality analysis, and fault tree analysis

CAPDEVs and MATDEVs will use the RCM process and FMECA to analyze the most effective approach to maintenance. Fault Tree Analysis will be performed to evaluate safety critical functions in the materiel's design. The RCM process will be applied and implemented for all materiel at the earliest opportunity and throughout the life cycle.

a. CAPDEVs and MATDEVs will use the RCM process to determine optimum failure management strategies, including maintenance approaches, and establishing the evidence of need for both reactive and proactive maintenance tasks to analyze the most effective approach to maintenance as outlined in DoDD 4151.22.

b. The RCM and FMECA processes will be applied and implemented for all materiel throughout the life cycle in accordance with current Army standards and guidance.

c. The MATDEV will plan, develop, program, and implement RCM processes and outputs.

d. The AMC will maintain the single Army database repository for RCM data (to include CBM+ data).

e. The FMECA will be conducted in accordance with American National Standards Institute AIAA–S–102.2.4, and be included in the design analysis section of the LCSP.

f. The MATDEV will use the standard failure reporting and corrective action system software tool as established by AMC to inform ILAs and SRs to ensure that reliable systems are produced for Soldiers. Contracting officers must ensure that contracts include a provision that contractors supporting the Government are not required to use the standard software tool, but contractors should use a tool that is compatible with government software.

g. The MATDEV will establish a failure reporting and corrective action system that uses the standard AMC failure reporting and tracking system tool to track system failures and corrective actions.

6–6. Level of repair analysis

The determination of the repair level within the Army maintenance system is an essential element of the LPD. The LORA is used to determine the optimum maintenance levels for repair actions and recovery of the end item and components. It considers availability and requirements for additional tools, support equipment, and skills intended to support units. The LORA will address the requirement to eliminate or minimize special tools and minimize test

equipment needed to support materiel. Early initiation of the LORA is required to influence design, maintenance, supportability, and provide input into the CDA and DSOR analysis.

a. The PSM will perform a LORA on all non-Class V materiel. A LORA will be performed on Class V munitions that contain embedded software that requires periodic upgrades, or requires prognostic and diagnostic equipment to support the item. The LORA will be—

(1) Initiated prior to MS B or program initiation.

(2) Updated—

(a) At the CDR.

(b) Prior to each MS.

(c) At transition from ICS to the Objective Support Concept if the LCSP and related objective support concept transition plan outlines a transition.

(d) As part of the post-deployment evaluation for materiel (Class V items excluded), no earlier than 1 year and no later than 3 years from first unit equipped date, using actual reliability data from fielded equipment. The LORA will be synchronized with the LCSP update.

(e) Every 5 years throughout the equipment life cycle.

b. The maintenance allocation charts are an output of the LORA, and reflect the approved maintenance concept (see AR 750–1).

c. The PSM will—

(1) Use the computerized optimization model for predicting and analyzing support structures to perform LORA.

(2) Ensure the LORA processes are executed using the procedures and activities outlined in SAE–AS1390.

6–7. Modeling and simulation

MATDEVs will use modeling and simulation to the maximum extent possible to assess the effectiveness and design maturity of materiel to reduce cost; schedule, development, and supportability risk (see AR 5–11).

6–8. Core logistics determination of applicability and core logistics analysis

a. Every Army acquisition program with a JCIDS CRD has a core requirement unless it is specifically excluded in 10 USC 2464. The MATDEV will conduct a core logistics determination of applicability by MS A, or prior to MS C for those weapon systems that enter after MS B for—

(1) MDAPs in accordance with 10 USC 4251.

(2) All other weapon systems and items of military equipment (see 10 USC 2464, DoDI 4154.24, DoDI 5000.85, and DoDI 5000.91).

b. The CLA determines core requirements and compliance with 10 USC 4252 and 10 USC 2464. Conduct a CLA—

(1) For MDAPs in accordance with 10 USC 4252.

(2) For all other weapon systems by MS B, or prior to MS C for those weapon systems that enter after MS B.

(3) Submit the CLA through the supporting LCMC to AMC for concurrence.

c. Document the determination of applicability and CLA in the LCSP annex for depot level maintenance analyses and determinations. A combined core logistics determination of applicability and CLA is authorized.

d. Prepare a memorandum for notification to Congress if the materiel meets one of the exclusions cited in 10 USC 2464.

e. Revise the CLA prior to MS C if—

(1) The design is modified and it is no longer excluded under 10 USC 2464.

(2) The support strategy changes to either require or discontinue depot level maintenance.

6–9. Core depot assessment

The MATDEV develops a CDA when the CLA determines that the materiel has core requirements. The CDA is an analysis of the potential providers of depot maintenance. The MATDEV will—

a. If there was a CLA, use the CLA as the basis for developing the CDA.

b. Request SMEs from the supporting LCMC(s), candidate depot(s), and LCMC Software Center(s).

c. Submit the completed CDA through the supporting LCMC to AMC for concurrence.

d. Complete the CDA by MS B or prior to MS C for those weapon systems that enter after MS B.

(1) The CDA will be part of Production and Deployment Phase entrance criteria and be reviewed at MS C.

(2) Ensure the required depot level support capability is established no later than 4 years after IOC.

e. Document the CDA in the LCSP Annex for depot level maintenance analyses and determinations. A combined core logistics determination of applicability, CLA, and CDA is authorized.

f. Review and update the CDA when—

(1) The materiel is modified, and such modification impacts depot level maintenance requirements.
(2) The support strategy or other pertinent analysis is changed.

6–10. Depot source of repair analysis

A DSOR is the analysis used to conduct an inter-Service competitive review ensuring all DoD facilities are considered in the depot selection process and a DoD wide best selection is made to include all DLRs, and software maintenance. The MATDEV will—

a. Conduct a DSOR in accordance with DoDD 4151.18, DoDI 4151.22, and the process outlined in DA Pam 700–127. This analysis will evaluate organic and commercial depot level maintenance providers and their capabilities, include the annual direct labor hours required to sustain the core capability, and assign depot sources of repair for both core depot and non-core depot requirements for the end item, all DLR components, and software.

b. Complete the DSOR for the end item, components, and software no later than 90 days after the CDR. The DSOR will be part of Production and Deployment Phase entrance criteria and be reviewed at MS C.

c. Submit the DSOR to the LCMC maintenance inter-Service officer for forwarding to the Army Maintenance Inter-Service Management Office (MISMO) for approval no later than 60 days prior to MS C to enable early preparation of depot facilities and coordination and planning for long-lead issues. The LCMC maintenance inter-Service officer will then forward the DSOR recommendation to the Army MISMO at AMC for concurrence. The Army MISMO will coordinate the DSOR recommendation with other Service MISMOs for concurrence.

d. Document the DSOR in the LCSP annex for depot level maintenance analyses and determinations.

e. Ensure that the DMSP reflects all proposed and finalized DSORs (see DA Pam 700–127).

6–11. Provisioning analysis

PSMs will complete an initial provisioning methodology to calculate a materiel's optimal depth and breadth of spare and repair parts at all specified stockage locations in order to meet a budget constraint or an operational availability goal (see AR 700–18). PSMs will—

a. Use the visual selected essential item stockage for availability method model for determining provisioning requirements.

b. Review the selected essential item stockage for availability method analysis (review by an independent evaluator is also recommended).

6–12. Post-fielding support analysis

a. PSMs will conduct PFSA to evaluate the readiness, supportability, and resource requirements for fielded materiel.

b. The PFSA will include the following:

(1) Planning required for conducting the analysis. A PFSA plan is required by first unit equipped date.
(2) Data collection beginning with the initial fielding to support the analysis.

c. The PFSA will be included as part of SRs.

d. The PFSA may be annexed to the LCSP at the PSM's discretion.

6–13. Integrated product support software tools

a. PSMs are required to use appropriate tools to perform IPS and LCC analyses.

b. Analytic tools available include the following:

(1) Automated cost estimating integrated tools.
(2) Cost analysis strategy assessment model.
(3) Computerized optimization model for predicting and analyzing support structures model.
(4) Improved performance research integration model.
(5) Systems planning and requirements software application.
(6) PFSA application.
(7) PowerLOGJ application.
(8) Simulation software products.
(9) Visual selected essential items stockage for availability method model.
(10) Materiel Enterprise Capabilities Database.
(11) DoD analytical tool database.
(12) DoD IPS Implementation Roadmap.

Chapter 7
Intellectual Property, Data Management, and Configuration Management

7–1. Intellectual property strategy

The MATDEV, in coordination with the PSM and others will—

a. In accordance with DoDI 5000.91, DoDI 5010.44, and AR 70–1, develop and maintain an IP strategy which will identify, plan, and program the short-term and long-term needs for IP (patents, copyrights, trademarks, trade-secrets), technical data, computer software documentation, computer software (source and executable code) and the associated rights and licenses to use, modify, reproduce, release, perform, display, or disclose such data for competitive and affordable acquisition and sustainment over the entire life cycle.

b. The IP strategy will be documented in the AS and the LCSP and will be updated appropriately throughout the program life cycle.

c. Data necessary to plan, program, implement, and maintain a given product support strategy (consideration of all IPS elements) will be included in the IP strategy along with the identification of the risk(s) and risk mitigation strategies associated with the product support strategy, wherein the lack of availability of data and/or rights/licenses could jeopardize the product support strategy fulfillment.

d. Foster an environment of open communication with industry, academia, and military laboratories early in the acquisition process. This communication will be characterized by:

(1) Exchange of information early in the process consistent with FAR Part 15.201(c), which may include, but is not limited to, industry days, one-on-one meetings, and requests for information. Measures will be taken to protect any IP with industry asserted restrictions discussed during this phase.

(a) Consistent with the intent of FAR Subpart 15.201(f), all contractor-owned IP discussed will be considered proprietary information and nonpublic contractor-owned IP will not be disclosed publicly. This includes IP the Government is privy to as a result of discussions, documentation, or demonstrations.

(b) Nondisclosure agreements may be used in the planning/presolicitation phase to protect both government and industry IP.

(2) Disclosure of as much detail as practicable about the Army's intended product support strategy. This should include information about the Army's intended sustainment needs and the broad categories of data required for reset, repair, and other maintenance of the system.

(3) Disclosure of appropriate information about the Army's IP strategy to encourage industry or academia to propose innovative approaches to licenses that will enable the Army to achieve desired outcomes. As applicable, discuss data and/or rights the Army might need for a specific purpose, for a limited time, or under a specific set of conditions.

(4) Discussion regarding use of a modular open system approach in the system design and development, and associated effects on data and license rights.

(5) Disclosure of as much detail as practicable about the Army's cybersecurity strategy and discussion of software compliance with cybersecurity standards. This may include reviewing any third party software license agreements and terms, allowing third party certification, or putting the source code in escrow.

e. The IP strategy will be linked to acquisition and sustainment outcomes prior to MS B for all ACAT levels. To determine what IP, technical data, computer software documentation, computer software and rights and licenses the program needs to achieve these outcomes (for each IPS element), identify the following:

(1) The data needed (for example, form, fit, function; operation, maintenance, installation, and training, major system interface/interface, or detailed manufacturing or process data).

(2) The source of the data (for example, engineering drawings, reports, test data, models, commercial manuals, and so forth).

(3) Why the data is needed (for example, to comply with a specific statute or regulation, to perform a specific function/task, that is, cataloging/provisioning, to ensure competitive procurement).

(4) Intended use/purpose(s) to use this data (for example, cyber assurance and air worthiness).

(5) With whom will this data be shared (for example, government personnel only, government personnel and government support contractors, government personnel, government support contractors, and third party contractors).

(6) What rights/licenses are needed in this data for the specified acquisition and sustainment outcomes (for example, unlimited rights, Government purpose rights, specially negotiated license rights, Small Business Innovation Research rights, or limited/restricted rights).

f. When considering any performance-based contracting approach, the program will include in the IP strategy the risks and risk mitigation strategies for not including data deliverables (for example, can the Government re-compete this or a similar contract action without data).

g. Consider the following when building the program's IP strategy:

(1) Program-specific and product sustainment considerations.

(a) The unique characteristics of the system and components.

(b) The product support strategy for the weapon system. Explain how the IP strategy will support a change in the product support strategy, if needed. Consider the effect of future manufacturing capabilities on the program or product support strategy.

(c) The organic industrial base strategy of the Army.

(d) The commercial market.

(e) How a modular open system approach is to be used for the program, if applicable. Define and differentiate the major systems platforms, major systems components, major systems interfaces, and general interfaces.

(2) Data deliverable considerations. The IP strategy must consider the particular data that is required, who paid for the development of which data, the purpose it will be used for, the level of detail necessary, whom the Government needs to share the data with, and the duration of the need for the data. When appropriate, the IP strategy should capture how the Army can leverage data with new design methods and rapid manufacturing to enhance systems over time or tailor them to specific environments.

7–2. Data management

The PSM will, in accordance with DoD 5010.12–M—

a. Develop the appropriate statement of work (SOW)/statement of objectives (SOO) or performance work statement (PWS) to identify the work to be done under contract.

b. Identify, for each instance in the SOW/SOO/PWS that requires a data deliverable, the CDRL number associated with a particular SOW/SOO/PWS statement.

c. Identify, for each data deliverable, a data item description (DID).

d. Prepare a CDRL for each data deliverable, and as required, tailor within the CDRL the associated DID.

e. Review data deliverables and when/where necessary notify the contracting officer when the markings on the deliverables (for example, limited rights) are to be challenged (per 10 USC 3772).

7–3. Configuration management

The MATDEV will establish a configuration management process as part of the systems engineering process to ensure MATDEV control over the materiel design, technical data, and software.

7–4. Logistics product data

The MATDEV will identify requirements for all LPD needed to support PSA. LPD will be delivered in accordance with SAE–GEIA–STD–0007 to support the development of IPS program documentation, reports, and products. The MATDEV will identify requirements for all LPD needed to support PSA. LPD will be delivered in accordance with SAE–GEIA–STD–0007 to support the development of IPS program documentation, reports, and products. MATDEVs will ensure that LPD is provided to Logistics Data Analysis Center (LDAC) for input in the LPDS as part of the LIW.

7–5. Provisioning technical documentation

The MATDEV will ensure provisioning technical documentation requirements are identified in the IP strategy, and acquired to support provisioning and re-provisioning of the materiel.

7–6. Equipment publications

Equipment publications include, but not limited to, the maintenance allocation chart, operator manuals, maintainer manuals, RPSTL, DMWRs, and NMWRs. The MATDEV will—

a. Include equipment publications requirements in solicitation documents and contracts.

b. Coordinate equipment publications portions of IETM contract solicitation documents in accordance with AR 25–30.

c. Ensure the accuracy and adequacy of equipment publication data and publications prior to Government acceptance of the materiel.

7–7. Maintenance allocation chart

The MATDEV will develop a maintenance allocation chart for all materiel.

7–8. Operator manuals

The MATDEV will develop operator manuals to support the materiel.

7–9. Maintenance manuals
The MATDEV will develop maintenance manuals to support field level maintenance for the materiel.

7–10. Repair parts and special tools list
The MATDEV will develop RPSTLs to support the materiel.

7–11. Depot maintenance work requirements and national maintenance work requirements
The MATDEV will develop DMWRs and NMWRs to support organic depot level maintenance and repair of the materiel.

Chapter 8
Integrated Product Support Planning

8–1. Integrated product support planning considerations
a. MATDEVs will apply design interface and other IPS enablers for all acquisition programs to—

(1) Improve RAM on materiel.

(2) Develop the maintenance plan using RCM early in the design process to conform to the Army maintenance (see AR 750–1).

(3) Identify and use—

(a) Materiel diagnostic and prognostic aids including embedded health management capabilities.

(b) Army standard TMDE, SKOT, batteries, and battery chargers.

(c) Army common generators and environmental control units.

(d) Embedded training for operators, maintainers, and support personnel.

(e) Simulators, simulations, and innovative training strategies.

(f) Army standard test equipment to meet automatic test equipment hardware and software needs.

(g) Item unique identification and automatic identification technology to enable total asset visibility and configuration management.

(h) Conventional organic capabilities (for example, the DLA Disposition Services) for the disposal of surplus assets.

(4) Optimize—

(a) Technology insertion strategies.

(b) Standardization and interoperability.

(c) Use of data collection programs to verify RAM performance.

(d) Modular Open Systems Architectures, including NDI and plug-and-play components.

(e) Energy-efficient designs.

(f) Using the AILA to create a net centric Common Logistics Operating Environment (see AR 210–25). This will be achieved by ensuring that architectures describing logistics or logistics information technology systems are integrated with the AILA.

(g) Standardized fuel requirements (see AR 70–12).

b. The MATDEV will ensure that the IPS and acquisition planning activities are included—

(1) In development of the AS, Cost Analysis Requirements Description, LCSP, SEP, TEMP, and solicitation documents.

(2) As an integral part of the systems engineering planning.

c. Obsolescence and DMSMS mitigation will be addressed proactively as part of a program's support strategy.

8–2. Life cycle sustainment plan
Per DoDI 5000.91, an LCSP is required for all AAF pathways except UCA, acquisition of services, and DBS. MTA LCSPs will be tailored in accordance with DoDI 5000.91. In lieu of an LCSP, the product support strategy for a UCA is included in the AS or SAMP while the DBS requires the product support strategy to be included in the capability support plan. All LCSPs and applicable annexes are required to be approved prior to acquisition decisions (MS A, B, C, FRP, MTA RF approval, and so on). All LCSPs for MCAs will be updated every 5 years for non-covered systems and in conjunction with the Army's SR (see DoDI 5000.91, 10 USC 4323) for covered systems (see10 USC 4324). For an MCA, the initial LCSP is developed by the CAPDEV and transferred to the MATDEV at program initiation for updates as the program progresses. The LCSP documents the product support strategy and is used as a daily guide within the MATDEV organization throughout the life cycle. The purpose of the LCSP is to methodically gather and

review relevant IPS data, assess alternative materiel design and support concepts using PSA, document decisions, coordinate plans and execute the selected IPS concept. The LCSP will—

a. Document the actions taken during the development and implementation of the MATDEV's IPS for the program.

b. Comply with the LCSP policy in DoDI 5000.91, DA Pam 770–3 guidance, and Office of the Secretary of Defense LCSP 3.0 guidance.

c. Align with the AS, IP strategy, SEP, TEMP, and corrosion prevention and control plan.

d. Document the results of the MDA's make or buy process and decision as part of the product support strategy, to include summarizing the results of market research and requests for information and applicability of arsenal critical manufacturing capabilities. See AR 700–90.

e. Be coordinated with the—

(1) MATDEV when the LCSP is managed by the CAPDEV.

(2) CAPDEV when the LCSP is managed by the MATDEV.

(3) Army Life Cycle Logistician (for programs where the AAE is the MDA).

(4) Technical and operational testers/evaluators, and other program participants.

(5) Supporting materiel command.

(6) The COE for SFA development and updates.

f. Table 8–1 identifies mandatory annexes to the LCSP.

Table 8–1
Life cycle sustainment plan mandatory annexes

Annex[1, 2]	Title	Milestone	Approval
A	CLA and DSOR determinations	A, B, and C	MATDEV in coordination with AMC
B	BCA	A, B, and C	MDA
C	ILA Assessment and corrective action plan (ACAT I and II)	B, C, FRP decision review and SRs	MDA
D[3, 4]	RSSP (MDAP only)	B	MATDEV
E	Corrosion prevention and control plan	B and C	MATDEV
F	System DEMIL and disposal plan	B and C	MATDEV
G[4]	Preservation and storage of unique tooling (MDAP only)	C	MDA
H	Technical data and IP plan	A, B, and C	MATDEV
I	DMSMS plan	B and C	MATDEV
J	Programmatic environment safety and occupational health evaluation (ACAT I programs)	B, C, and FRP	MATDEV
K[5]	Human systems integration plan	B and C	MATDEV

Notes:

[1] Annexes are not mandatory for MTA LCSPs. For other LCSPs, additional annexes (for example a T2S plan), material fielding/material release plan, or detailed description of the support approach by IPS element may be added at the PSM's discretion.

[2] All annexes will reflect updates necessary to keep the LCSP current.

[3] Only applicable if replacing another capability (see 10 USC 2437).

[4] Annexes D and G apply to MDAPs. Other programs may include these annexes in the LCSP at the PSM's discretion.

[5] Human systems integration plans for programs with DOT&E oversight will be approved by DOT&E.

g. Prior to MS C, the LCSP will include the following:

(1) The details of the plan, exit criteria, and the timeline to achieve all program decision points, key events, and MSs to include materiel integration (type classification and full materiel release) (see AR 770–3).

(2) An explanation why organic support cannot be provided for any materiel requiring contractor support personnel in the forward maneuver area (see AR 715–9).

(3) Materiel retention purpose(s) as defined by DCS, G–3/5/7 in coordination with DCS, G–8, to support Army divestiture efforts.

(4) T2S plan including execution conditions and timeline.

h. Responsibility for LCSP development—

(1) Prior to program initiation, the initial LCSP will be prepared by the CAPDEV as early as possible, but not later than 60 days prior to MS A.

(2) The CAPDEV will provide the LCSP to the MATDEV at program initiation. The MATDEV will develop the initial LCSP when the program enters the life cycle at MS B or later.

(3) For Joint service acquisition programs where the Army has lead responsibility, the PSM will develop an LCSP in coordination with all participating Services. For other programs, the Army representative on the lead service PSMIPT will coordinate Army input to the LCSP.

i. After the initial LCSP has been transferred from the CAPDEV to the MATDEV, the PSM will update the LCSP for—

(1) The development RFP.

(2) Each MDR.

(3) FRP decision.

(4) Change in PBPSS, or every 5 years, whichever occurs first.

j. The MATDEV will coordinate the LCSP and gain approval in accordance with table 8–2.

Table 8–2
Life cycle sustainment plan development, coordination, and approval process

ACAT Level	Develop/Collaborate	Review/Concur[1]	Approve
ID and designated special interest programs[2]	MATDEV PSMIPT	ASA (ALT)[3], DCS G–4, DCS G–8, AMC, PEO, LCMC, CAPDEV representative	Assistant Secretary of Defense for Sustainment (ASD (S))
I and select II[4]	MATDEV PSMIPT	ASA (ALT)[3, 4], DCS G–4, DCS G–8, AMC, PEO, LCMC, CAPDEV representative	DASA (S)
II and IV	MATDEV PSMIPT	PEO, LCMC[5], CAPDEV representative[6]	PEO
MTA RF	MATDEV PSMIPT	ASA (ALT)[3], DCS G–4, DCS G–8, AMC, PEO, LCMC, CAPDEV representative	DASA (S)

Notes:

[1] Review periods will not exceed 15 business days by any organization. Concurrence by representatives identified in DA Pam 700–127 coordination pages. Representatives signing for concurrence on LCSP coordination sheets following review must provide written justification for reasons for a non-concurrence with recommended changes to the LCSP to reach concurrence. The approval authority makes the final decision where full agreement cannot be reached.

[2] ASD (S) approval is required for MS A or equivalent, each subsequent MS, and FRP decision. DASA (S) approves LCSP updates, in coordination with ASD (S), following the materiel's IOC.

[3] MATDEVs will send draft LCSPs to ASA (ALT) (SAAL–LP), who will be responsible for coordinating within HQDA and AMC. SAAL–LP will provide consolidated responses to the MATDEV.

[4] DASA (S) is delegated approval authority for all LCSPs where the AAE is the MDA, to include MTAs.

[5] The sustainment command representative for LCSP coordination will be the commander of the AMC LCMC designated as the materiel release authority for a program. The Program Executive Office for Simulation, Training, and Instrumentation (PEO STRI) and Joint PEO for Chemical Biological Defense do not require a signature in the sustainment command representative block since they are the materiel release authorities.

[6] The CAPDEV representative is the designated representative from the Combined Arms Support Command of TRADOC.

8–3. Life cycle sustainment plan content

PSMs will ensure that the LCSP be a comprehensive planning document for the IPS program that is a current and daily tool to guide IPS program participants in PBPSS implementation. DA Pam 700–127 provides detailed guidance for LCSP content.

8–4. Maintenance support planning

a. Maintenance support planning is—

(1) An integral part of the IPS process and will be detailed in the LCSP.

(2) Aligned with the requirements in the CRD. In developing alternatives and selecting a final maintenance concept, the MATDEV, in coordination with the CAPDEV will evaluate factors such as—

(a) Compatibility with the Army maintenance system (present and planned).

(b) Complexity and criticality of the materiel.

(c) Mobility and transportation requirements.
(d) Operational readiness objectives, to include fleet materiel availability.
(e) The environment in which the materiel will operate.
(f) Support concept for materiel that are subsystems.
(g) LORA, maintenance task analysis, and RCM as part of the PSA process.
(h) O&S cost.
(i) Maintenance support facilities and equipment.
(j) Care of supplies in storage.
(k) Corrosion prevention and control.

b. Planning related to software management and support will be detailed in the LCSP. Interrelationships with the other IPS elements will be addressed through the PSA process.

c. The RCM analysis will be used to develop the maintenance support plan.

8–5. Logistics footprint

MATDEVs will maximize use of standard Army tools, test equipment, batteries, battery chargers, and common generators and environmental control units with the goal of eliminating or minimizing requirements for these items. MATDEVs will also maximize opportunities to reduce requirements for spare and repair parts, fuel consumption, and support structure. MATDEVs will include in contracts, as appropriate, incentives that support the Army goal of eliminating or minimizing requirements for special tools, test equipment, and unique components.

8–6. Special tools

The Army's goal is to reduce its logistics footprint, decrease O&S costs, and enhance the effective use of special tools. Special tools have expanded the footprint of our maintenance units, increasing O&S costs and creating a challenge to account for, locate, transport, store, and access them to effect timely repair on the battlefield.

a. When developing special tools—

(1) MATDEVs will maximize the use of common tools at field level maintenance.

(2) PEO approval is required if special tools are necessary to complete more than 5 percent of the required field level maintenance tasks on a specific end item or component, or if special tools make up more than 5 percent of the total tool list requirement.

(3) Maintenance CAPDEVs are the Army authorities for special tools and will determine whether system or commodity-based strategies will be pursued. Maintenance CAPDEVs are the U.S. Army Combined Arms Support Command for ground maintenance special tools, U.S. Army Aviation Center of Excellence for aviation maintenance special tools, and U.S. Army Medical Command for medical maintenance special tools.

(4) MATDEVs may develop a system or commodity-based special tools SKOT as directed by the maintenance CAPDEV.

(5) MATDEVs will submit requirements and documentation for special tools to the maintenance CAPDEV for review.

(6) The maintenance CAPDEVs in coordination with central tool managers (CTMs) will—

(a) Review all requirements for special tools to eliminate redundancy.

(b) Focus on existing SKOT components lists to identify common components, reduce the logistics footprint, and support development of kitting solutions.

(7) The MATDEV or CTM will configure special tool kits to support maintenance tasks based on maintenance CAPDEV requirements. The special tools will be documented and issued as part of a system or commodity-based special tools kit or module.

b. The Army CTMs are—

(1) PM of SKOTs for all ground systems.

(2) PM aviation ground support equipment for all aviation and aviation support systems.

(3) PM medical devices for medical and medical support systems.

c. For contracts, MATDEVs will—

(1) Ensure that all RFPs contain contract language that incentivizes maximum use of common tools.

(2) Execute all special tool acquisitions using competitive contracts whenever possible.

(3) Use kitting solutions that facilitate accountability, transportability, and ease of use.

(4) Ensure procurement of all system or commodity-based special tools are executed through a CTM.

d. MATDEVs will identify and provide funding for the development and procurement of new or updated system or commodity-based SKOTs to leverage the core competencies for developing, acquiring, and creating supply catalogs for tool kits.

e. The MATDEV or CTM will develop component lists for their SKOTs. Proposed component listings will be submitted to the maintenance CAPDEV for approval and provided to LDAC supply catalog database before procurement actions are executed. MATDEVs or CTMs will maintain components lists to ensure that data is current, and verify that system or commodity-based special tools kit configurations continue to support maintenance tasks based on CAPDEV requirements.

f. The MATDEV or CTM will develop basis of issue plans (BOIPs), obtain type classification standard designations, and request line item numbers (LINs) for their SKOTs.

g. All special tools SKOTs will be accounted for and documented in the LDAC database and on the respective modified table of organization and equipment or TDA, as applicable, in accordance with the DCS, G–3/5/7's documentation policies for force management.

h. The RPSTL in the TM will continue as the primary technical data source for each special tool because of requirements for managing system configuration. MATDEVs will update the RPSTL to ensure that data is current, and verify that system or commodity-based special tools kit configurations continue to support maintenance tasks based on CAPDEV requirements.

8–7. Provisioning plan

MATDEVs will develop a provisioning plan to ensure successful provisioning for the materiel (see AR 700–18).

8–8. Depot maintenance partnerships

MATDEVs will develop PBPSSs that include the best use of public and private sector capabilities through Government and industry partnering initiatives, in accordance with statutory requirements.

8–9. Recapitalization program

PSMs will provide support in the development of a recapitalization program for their materiel when recapitalization is approved by the AAE.

8–10. Depot maintenance support plan

MATDEVs will develop a DMSP prior to MS C to ensure core depot capability is properly planned and implemented.

8–11. Software support planning

a. The MATDEV will ensure that software associated with materiel is considered an integral component of that materiel, and that software support and maintenance support device interoperability is addressed through the IPS program.

b. Costs for software upgrades or changes, and post-deployment software support will be minimized throughout the materiel life cycle, to the maximum extent practicable, without negative impact to materiel readiness.

c. When available, use enterprise wide commercial computer software licenses when they reduce cost.

d. The MATDEV will plan for software support to include post-production software support (PPSS) and document the requirements in the computer resources life cycle management plan (CRLCMP).

8–12. Fielded software support

MATDEVs will consider the maintenance concept to be implemented when developing IPS requirements to support fielded software.

8–13. Diminishing manufacturing sources and material shortages plan

PSMs will ensure that the DMSMS plan follows policy and guidance prescribed in DoDI 4245.15 and DoDM 4245.15.

8–14. Resource planning

a. The CAPDEV and MATDEV will ensure that costs and resource requirements for IPS execution are planned, programmed, budgeted, funded, and monitored throughout the acquisition program life cycle.

b. The CAPDEV and MATDEV will establish IPS program objectives that support the reduction of O&S cost.

c. The CAPDEV and MATDEV will prepare, submit, and defend IPS resource requirements through the planning, programming, budgeting, and execution system process.

8–15. Operations and support cost
MATDEVs will plan resources to cover the entire life cycle for the materiel and software. MATDEVs will establish an O&S cost program to identify O&S cost targets, O&S cost drivers; O&S cost reduction opportunities, and metrics to measure cost reduction progress.

8–16. Affordability
CAPDEVs and MATDEVs will balance requirements with cost goals to ensure affordability of materiel and software.

8–17. Cost as an independent variable (cost consciousness)
CAPDEVs and MATDEVs will ensure that O&S cost be considered equally along with performance and schedule in tradeoff decisions for ACAT I, II, and III programs.

8–18. Program cost estimate
PSMs will support development of program cost estimates and ensure that O&S cost estimates are realistic and aligned with the materiel product support strategy.

8–19. Funding appropriations
PSMs will ensure that funding requirements and budget requests for IPS are complete and reflect the required funding appropriations throughout the life cycle.

8–20. Replaced system sustainment plan
10 USC 4321 requires an RSSP for all MDAPs with IOC after October 1, 2008. The RSSP will provide for an appropriate level of budgeting for sustaining the legacy materiel until the new materiel to be developed under the MDAP is fielded and assumes the majority of responsibility for the mission of the existing materiel. The RSSP is required by MS B for the new MDAP.

a. The MATDEV for the existing materiel will prepare the RSSP in coordination with the MATDEV for the new materiel.

b. The RSSP will be annexed to the LCSP for the existing materiel and the LCSP for the MDAP that will replace the existing materiel.

c. The RSSP will include, as a minimum—

(1) The MS schedule for the development and fielding of the MDAP, including the scheduled dates for low-rate initial production, IOC, FRP, and FOC, and the date when the replacement materiel is scheduled to assume the majority of responsibility for the mission of the existing materiel.

(2) An analysis of the existing materiel to assess the following:

(a) Anticipated funding levels necessary to ensure acceptable reliability and availability rates for the existing materiel, and to maintain mission capability of the existing materiel against the relevant threats.

(b) The extent to which it is necessary and appropriate to transfer mature technologies from the new materiel or other materiel to enhance the mission capability of the existing materiel against relevant threats, and to provide interoperability with the new materiel during the period from initial fielding until the new materiel assumes the majority of responsibility for the mission of the existing materiel.

d. The RSSP may be a conversion of the existing materiel LCSP provided it meets the minimum criteria for an RSSP.

e. Exceptions. The RSSP requirement will not apply to a MDAP if the Secretary of Defense determines that the—

(1) Existing materiel is no longer relevant to the mission.

(2) Mission has been eliminated.

(3) Mission has been consolidated with another mission in such a manner that another existing materiel can adequately meet the mission requirements.

(4) Duration of time until the new materiel assumes the majority of responsibility for the existing materiel's mission is sufficiently short so that mission availability, capability, interoperability, and force protection requirements are maintained.

f. The Secretary of Defense may waive the applicability of the RSSP to a MDAP if the Secretary determines that, but for such a waiver, the Department would be unable to meet national security objectives. Whenever the Secretary makes such a determination and authorizes such a waiver, the Secretary will submit notice of such waiver and of the Secretary's determination and the reasons therefore in writing to the congressional defense committees.

8–21. System demilitarization and disposal plan

a. Every MATDEV will develop a system DEMIL and disposal plan that documents the requirements for DEMIL and disposal of the materiel when no longer required (see DA Pam 700–127). The plan consists of two parts:

(1) Programmatic (required at MS B). This part provides information on how DEMIL considerations will be integrated into the program's systems engineering processes.

(2) Procedural (required as soon as equipment is subject to disposal, but no later than initial fielding). This part of the plan provides information to support development of the DEMIL technical publication for the performance of physical DEMIL on the materiel.

b. The plan is—

(1) A living document and will be updated as required.

(2) Approved by the MATDEV.

8–22. Materiel fielding planning

The PSM, through the PSMIPT, will develop materiel fielding plans compliant with AR 770–3.

8–23. Transition to sustainment planning

MATDEVs will assign responsibilities for developing a T2S plan in a T2S IPT or an existing IPT by acquisition MS B. PSMs will coordinate the development of the T2S plan with the LCMCs and ensure approval by the PEO and LCMC by acquisition MS C. The plan can be documented in the content of the LCSP or as an optional annex.

8–24. Preservation and storage of tooling for Major Defense Acquisition Programs

a. MATDEVs for MDAPs will develop a plan for preservation and storage of unique tooling as an annex to the LCSP and submit the plan to the MDA for approval at MS C. The plan will include identification of any contract clauses, facilities, and funding required for the preservation and storage of such tooling and will describe how unique tooling retention will continue to be reviewed during the life of the program.

b. If an MDA other than the DAE determines that preservation and storage of unique tooling is no longer required, a waiver will be submitted to the DAE for notification to Congress.

c. Unique tooling identified in the LCSP or prior to MS C in the SEP are considered DoD serially managed and must meet the requirements of Item Unique Identification (see AR 700–145).

Chapter 9
Force Development Documentation and Training Systems

Section I

Equipment and Personnel

9–1. Force development documentation

For force development documentation purposes, a major item is a combination of an end item, its components, and personnel that ensures mission accomplishment. For purposes of Army major item system management, a major item can be any Supply Class II (individual equipment), Class V (ammunition and missiles), Class VII (major end items), or Class VIII (medical materiel) that is recorded within the Standard Study Number-Line Item Number Automated Management and Integrating System (SLAMIS). A major item materiel can be a weapons system, a support system, or an ammunition system.

a. The PEO, MATDEV, and LCMC with support from the PSMIPT, are responsible for documenting materiel and complete associated support data at the LIN level that justifies force development documentation. This documentation authorizes force management and structuring activities (see AR 71–32). More importantly, it is used to ensure the force structure has the appropriate military occupational specialty personnel to maintain the materiel and all equipment (component major items (CMIs) and associated support items of equipment (ASIOE)) needed to meet its mission. Identification of CMI and ASIOE is a major factor in the total army analysis and the Army acquisition objective processes. The required materiel-related information will be submitted to USAFMSA to affect successful fielding of the materiel (see AR 71–32).

b. The MATDEV will develop the BOIPFD, which includes direct-productive annual maintenance manhours (DPAMMH) and the major item system map (MISM) for a new materiel within 60 days from receipt of a developmental line item number (ZLIN) from SLAMIS.

(1) Only a LIN in DA Pam 708–3 or SB 700–20 requires BOIPFD, MARC, and MISM, and can be used as CMI and ASIOE.

(2) MARC provides a means of identifying, justifying, and establishing the correct quantity and mix of maintenance personnel for sustainment of Army materiel. DPAMMH is used in conjunction with the MISM to determine the end item's total MARC.

(3) The MISM is an integrated systems management process that identifies the CMI and ASIOE needed for the materiel to meet its mission.

c. The MATDEV will maintain BOIPFD throughout the life cycle by use of the amended BOIPFD process. Amended BOIPFD is needed for any CMI, ASIOE, operator's and replacement end item changes due to modernization, an increase or decrease of DPAMMH, and changes to basis of issue.

d. Accepted BOIPFD is used to develop the BOIP. Accepted DPAMMH is used to develop the Army MARC Maintenance Database.

9–2. Line item numbers

a. Upon the decision to field the new materiel to fulfill the capability gap, the MATDEV will obtain a ZLIN and standard study number from SLAMIS. A ZLIN linked to a standard study number is required to start the BOIPFD, MARC, and MISM processes.

b. MATDEVs will submit BOIPFD and DPAMMH to the USAFMSA, a field operating agency of the DCS, G–3/5/7, for acceptance within 60 days from receipt of a DA approved ZLIN from SLAMIS.

c. The Army Enterprise Systems Integration Program will be used by MATDEVs to request and establish all nonstandard LINs for nonstandard materiel. Users must request access to Army Enterprise System Integration Program at https://www.aesip.army.mil/irj/portal.

9–3. Basis of issue plan feeder data

a. BOIPFD is a requirements document.

b. The MATDEV will develop BOIPFD in coordination with the PSMIPT including representatives from the following:

(1) USAFMSA.

(2) LCMC.

(3) U.S. Army Capabilities Integration Center Force Development Division.

(4) Tactical Wheel Vehicle Requirements Management Office.

(5) DCS, G–3/5/7 (DAMO–LMO).

(6) DCS, G–8 (Systems Synchronization Office).

(7) ARNG Force Management Division.

(8) USARC.

c. The MATDEV or LCMC will input the BOIPFD in the LIW and release it to USAFMSA for acceptance within 60 days from receipt of a DASA (S) approved ZLIN from SLAMIS. The BOIPFD will be used to—

(1) Establish the requirements and the basis of issue for new ZLIN and improved LIN materiel and its CMI, ASIOE, and personnel to Army units.

(2) Identify organizational, doctrinal, training, duty position, and personnel information for materiel operators and maintainers that are used to develop the BOIP and Army MARC Maintenance Database for the table of organization and equipment.

d. MATDEVs will—

(1) Invite the USAFMSA to participate in the PSMIPT when developing BOIPFD to ensure timely and accurate submission.

(2) Maintain BOIPFD throughout the life cycle by use of the amended BOIPFD process.

9–4. Basis of issue plan

The BOIP is the document that establishes the distribution of new equipment, ASIOE, and personnel, as well as the reciprocal displacement of equipment and personnel (see AR 71–32).

a. The MATDEV, in coordination with the CAPDEV, will initiate the BOIP process by compiling BOIPFD in the LIW and submit to USAFMSA for acceptance within 60 days of receipt of a ZLIN (see AR 770–3 and DA Pam 770–3).

b. The MATDEV will maintain the BOIP by the amended BOIPFD process.

9–5. Manpower requirements criteria

MARC are HQDA-approved standards to determine minimum mission-essential wartime position requirements for combat support and combat service support functions in table of organization and equipment (see AR 71–32).

a. The MATDEV will develop initial DPAMMH in LIW within 60 days of receipt of an HQDA-approved ZLIN for submission to USAFMSA for acceptance. Sources for DPAMMH are engineering estimates, PSA, and the MARC study.

b. The MATDEV will—

(1) Maintain and ensure accurate DPAMMH is maintained throughout the life cycle by use of the LIW MARC process.

(2) Review MARC every 3 years. Review will also include the MISM to evaluate MISM affects to the total DPAMMH. When LORA reruns are conducted for manpower intensive materiel, rerun MARC studies to ensure materiel DPAMMH are accurate based on LORA results.

(3) Establish and maintain auditable, accurate DPAMMH for Army materiel throughout the life cycle.

9–6. Major item system map

The MISM is derived from the BOIPFD that aggregates the CMI and ASIOE into a materiel view.

a. The MATDEV will compile and maintain the MISM using the LIW BOIPFD process in support of BOIP development.

b. The MISM is used in conjunction with the DPAMMH to determine the end item's total MARC.

c. The MISM identifies the CMI(s) that are not always readily visible in Army property accountability systems. The MISM is a factor in total Army analysis, the Army acquisition objective, the Army Flow Model, and the Army War Reserve Deployment System.

d. The MISM and DPAMMH processes do not consider ASIOE DPAMMH in determining total materiel level MARC.

Section II

Training Systems and Devices

9–7. Pre-acquisition

PEO STRI will provide support to CAPDEVs during concept formulation for all training devices.

9–8. Acquisition

PEO STRI will—

a. Participate in initial requirements analysis and execute the complete acquisition of approved and funded training systems and training devices.

b. Conduct life cycle management of all training systems and training devices that are LCCS and ensure funding requirements are in the POM.

c. Perform item management for all training systems and training devices.

9–9. Training system and training device fielding

a. PEO STRI will coordinate training system and training device fielding requirements and activities with gaining commands and appropriate MATDEVs for materiel (see AR 770–3).

b. The PEO STRI will ensure IPS support is funded to support fielded training systems and training devices.

9–10. Training system and training device support

The PEO STRI will develop support strategies for all training systems and training devices to ensure that the best IPS is selected.

9–11. Post-production software support

The PEO STRI will—

a. Provide support to materiel MATDEVs in development of the CRLCMP to support the MS C decision.

b. Budget for PPSS for training systems and training devices.

9–12. New equipment training

a. MATDEVs will develop NET for their materiel to ensure initial training and the transfer of knowledge to the tester or user on operation, maintenance, and IPS during testing and materiel fielding.

b. The MATDEV will—

(1) Initiate NET development at program initiation.

(2) Provide a NET Team prior to testing and materiel fielding to ensure tester and Soldiers know how to maintain and operate the materiel.

Chapter 10
Environment, Safety, and Occupational Health

10–1. Environmental impact

a. MATDEVs will ensure compliance with Federal, State, local, and applicable international laws and regulations when selecting materials used in the materiel design and IPS structure.

b. Materiel maintenance planning will consider, to the maximum extent practicable, the following factors—

(1) Elimination of virgin material requirements.

(2) Use of recovered materials.

(3) Reuse of product.

(4) Recyclability.

(5) Use of environmentally preferable products.

(6) Waste prevention (including toxicity reduction or elimination).

(7) Hazardous materials (HAZMAT) reduction or elimination.

(8) Ultimate disposal.

10–2. Environment, safety, and occupational health considerations

MATDEVs will consider all ESOH impacts of the materiel design and IPS program to ensure that the use of substances and procedures that can harm people, animals, or the environment are eliminated or minimized. MATDEVs will—

a. Check materials proposed for use against the toxic release inventory list 42 USC Chapter 116.

b. Perform an environmental risk assessment and document the assessment in the programmatic ESOH evaluation.

c. Evaluate explosive ordnance disposal assessment.

d. Evaluate maintenance and supply procedures for opportunities for increased shelf-life, reuse, recycling, and reclamation.

e. Establish a product stewardship strategy addressing ESOH considerations.

10–3. Hazardous materials

a. MATDEVs will ensure that the requirements for HAZMAT in materiel are kept to an absolute minimum to reduce hazards associated with transportation, storage, operation, maintenance, handling, and future disposal requirements.

b. The MATDEV, through the PSM and PSMIPT will ensure that all aspects of the program address HAZMAT potential and minimize all environmental impacts and—

(1) Evaluate potential hazards resulting from the operation, maintenance, and support of the materiel for ESOH considerations.

(2) Develop and update relevant documents such as system safety data sheets, operator manuals and air and water permits based on the results of hazard evaluation. Items documented on the system safety data sheets to be procured or adopted as standard items will be processed in accordance with AR 700–141.

(3) Minimize associated LCC and include costs associated with handling, transport, and disposition of HAZMAT in LCC estimates.

(4) Eliminate or reduce all forms of pollution at the source and address pollution prevention throughout the materiel life cycle.

(5) Comply with Federal, State, local, and applicable international environmental regulations throughout the materiel life cycle.

(6) Reduce hazardous material use when selecting material for products, corrosion prevention, manufacturing, maintenance, DEMIL, and disposal processes throughout the materiel life cycle.

(7) Develop render safe procedures that focus on risk reduction when dealing with explosive components, radioactive material, and other hazardous chemicals and compounds.

Chapter 11
Test and Evaluation

11–1. Supportability test and evaluation

a. Evaluation of materiel supportability issues will be performed using test data from contractor, government, and other sources.

b. Supportability testing will—

(1) Be conducted in accordance with AR 73–1.

(2) Use Army personnel skills and product support package planned for the operational environment of the organization to which the materiel will be assigned.

c. 10 USC 4171, places specific restrictions on the use of contractor support during operational T&E (see AR 73–1).

11–2. Product support package

a. The MATDEV will develop a product support package suitable for supporting the materiel in its operational (deployed) environment. The product support package will be flexible and tailored to the materiel-peculiar requirements, and related to supportability testing issues. The product support package will be delivered to the test site no later than 30 days before LD begins.

b. The MATDEV will use the product support package during T&E and LD to validate the product support package during test and LD. Results of supportability testing and the LD will be used to refine the product support package prior to fielding.

c. The product support package component list will be provided 60 days before LD begins.

11–3. Logistics demonstration

The MATDEV will evaluate the adequacy of the product support package through a LD and ensure that the gaining unit has the logistical capability to achieve IOC. The LD should be conducted at the earliest opportunity possible and completed prior to operational test. However, the LD will be completed prior to the materiel release approval and FRP decision. The MATDEV will complete a LD on all acquisition programs unless the requirement is specifically waived. If a waiver is necessary, submit a request to DASA (S) (SAAL–LC), 103 Army Pentagon, Washington, DC 20310–0103 with supporting rationale and an alternate plan for accomplishing the LD. A LD waiver will not exclude the requirement for a CAPDEV evaluation of the technical publications. A successful LD is the satisfactory completion of all tasks as documented in the LD plan. A follow-on LD will be conducted on all failed tasks. A delta LD will be performed that addresses tasks in the LD plan that were not tested, and any additional tasks that are identified as part of the LD.

a. The LD will be performed as part of developmental testing outlined in AR 73–1 to evaluate the—

(1) Supportability engineered and established for the materiel.

(2) Adequacy of maintenance planning for the materiel (such as maintenance concept, task allocation, troubleshooting procedures, and repair procedures) and its peculiar support equipment.

(3) Technical publications.

(4) LPD.

(5) Training and training devices.

(6) Human factors engineering aspects and MANPRINT related to operator and maintainer tasks.

(7) TMDE, including the embedded diagnostics and prognostics, test program set, and diagnostic procedures in the TM.

(8) Tools.

(9) Spares and repair parts list.

(10) Interoperability of maintenance support devices.

b. The MATDEV will—

(1) Ensure that a LD team is established that consists of PSMIPT members that plan, conduct, participate, and observe the LD.

(2) Develop, through the PSM in coordination with the PSMIPT, a detailed LD plan at least 120 days (draft) and 30 days (final) before the LD. The PSMIPT will conduct a readiness review 30 days prior to the LD. The review will evaluate entrance criteria and assess adequacy of planning, availability of resources, and completion of other requirements necessary to ensure readiness for entry into the LD and that LD objectives can be achieved. Ultimately, it is the MATDEV's decision to enter into a LD and accept any risks identified by the PSMIPT. Failure to meet the entrance criteria runs the risk that the LD will not be completed on schedule or in accordance with the LD plan.

(a) Summarize the LD requirements in part III of the materiel's TEMP (to include any early abbreviated demonstrations EADs) and resource requirements (for example, Soldiers, materials, facilities) in part V of the TEMP.

(b) Coordinate the LD requirements through the test schedule and review committee 6 months prior to the LD date (see AR 73–1). MATDEV coordination will include providing required information for the test resource plan through the ATEC systems team chairperson and independent evaluator.

(3) Provide a production representative materiel for the LD.

(4) Ensure that LDs include the nondestructive disassembly, reassembly, diagnostics, and prognostics demonstration of a production representative materiel using its required TMDE, tools, training devices, technical publications and support equipment. The LD will address operator, field maintenance, and remove and replace tasks; preventive maintenance checks and services; troubleshooting; and diagnostics and prognostics. The diagnostics and prognostics demonstration will address 100 percent of all known critical faults, introduced into the equipment individually according to the FMECA. Additional faults will be introduced into the equipment individually according to the FMECA through a random process weighted to represent predicted failure rates. MIL–HDBK–470 may be used as a reference to determine fault insertion sample size and methodology.

(5) Ensure the materiel and its product support package are evaluated as a total system, including critical aspects of MANPRINT related to materiel maintenance that requires representative Soldiers (military occupational specialty, grade, and additional skill identifier).

(6) For technical publications—

(a) Ensure validated preliminary TMs are used for the LD and sufficient for use by representative Soldiers during operation, maintenance, and troubleshooting. Preliminary TMs will be validated by the contractor prior to the LD (see AR 25–30). The manuals readiness for the LD will be assessed by a review of contractor provided validation and reports, and by government SME review.

(b) Ensure that TMs are verified by the Government after the LD in accordance with AR 25–30. The LD will not be used as the Government verification of TMs for ACAT I and II programs. For ACAT III programs, a separate LD and TM verification is the preferred method. The LD and TM verification may be combined if deemed low risk and if documented in the LD plan and approved by the PSMIPT. TM deficiencies identified during the LD and operational test will be corrected and included in final reproducible copy before submitting to the LDAC. Both the LD and verification team (MATDEV, LCMC, CAPDEV, ATEC/Army Evaluation Center, and LDAC) must agree on the strategy well in advance of LD. Disagreement among the verification team on the strategy will be taken to the responsible MATDEV for a decision to proceed with the LD. For ammunition items, the verification of the TM may be performed in conjunction with operational testing, this is performed in lieu of performing the TM verification as a separate event for ammunition items. If the TM is an IETM, CAPDEV and LDAC concurrence with the verification plan is required (see AR 25–30).

(7) Conduct a diagnostics and prognostics demonstration during the LD to demonstrate that the diagnostic capabilities for the equipment will meet specifications when fielded. The LD plan must address the diagnostics and prognostics demonstration and plans for fault insertion, to include the failure modes that can be simulated, inserted, and the insertion method. Faults must be introduced in a safe manner to prevent damage to the test materiel and injury to personnel.

(8) Prepare a report in coordination with the PSMIPT summarizing the LD results and recommendations. The LD report will be completed 30 days after conclusion of the LD.

c. EADs may be conducted using prototypes to support design changes during the systems engineering process. EADs may influence the supportability of materiel during the EMD Phase, mitigate risk and provide information to support major MS decisions. EADs may include the following: tailored tests, selected analyses, evaluations, and demonstrations that have been modified for each program. EADs will not replace a LD, but may—

(1) Be used to demonstrate selected aspects of the product support package if the tasks are performed by representative Soldiers in the presence of the LD team.

(2) Establish the satisfactory conduct of tasks. If these tasks remain unchanged during the course of the EMD Phase and the PSMIPT concurs, they need not be repeated during the LD.

d. The LD may be tailored based on the AS and LCSP—

(1) If the materiel transitions from ICS to the objective support concept after materiel release, a LD will be completed for tasks impacted by the transition, and a SR will be scheduled to ensure that all logistics requirements have been completed prior to the formal handoff of support responsibility to the user.

(2) A tailored LD will not preclude the CAPDEV TM evaluation requirement.

Chapter 12
Integrated Product Support Program Reviews and Reporting

12–1. Milestone decision review
PSMs will ensure that IPS documentation is available and current to support all MDRs.

12–2. Type classification
MATDEVs are required to type classify their materiel in accordance with AR 770–3.

12–3. Materiel release
MATDEVs are required to obtain materiel release for their materiel in accordance with AR 770–3.

12–4. Supportability assessment
MATDEVs will conduct supportability assessments to support in-process reviews and each MDR. MATDEVs with ACAT I and ACAT II programs will conduct their supportability assessment using the ILA process (see DA Pam 700–28). MATDEVs for ACAT III programs are encouraged to use the ILA process when conducting supportability assessments.

12–5. Independent logistics assessment
ILAs will be conducted prior to MS B and C, and prior to the FRP decision in accordance with 10 USC 4324 and DoDI 5000.91 requirements. PEOs will conduct an ILA for all ACAT I, ACAT II, and select ACAT III weapon system programs. Select ACAT III programs requiring an ILA will be determined by the MDA. The PEO will certify to the MDA that the program PBPSS, LCSP, management, resources, and execution will meet the CAPDEV's requirements. The certification will be by memorandum and will include the results of the ILA as an enclosure. In accordance with DoDI 5000.91, SRs satisfy the requirement for ILAs of covered systems after a program has achieved IOC. DoD Independent Logistics Assessment Guidebook provides guidance for conducting ILAs.

12–6. Department of the Army integrated product support reviews
MATDEVs with MDAPs will participate in DA IPS reviews of their programs. The DASA (S) chairs the reviews that evaluate acceptability of the sustainment planning and implementation for the materiel and software.

12–7. Sustainment reviews
The Army requires formal SRs to ensure that performance of the product support strategy for materiel is meeting the established sustainment objectives and thresholds, and to coordinate the transition to post-production sustainment funding. The focus of the SRs is to ensure that the materiel can be sustained throughout its life cycle to achieve its expected useful life, maintain readiness and availability requirements, and evaluate actual and projected operation and support costs.

a. The MATDEV is responsible for continuing the IPS process and utilizing data collected from testing, fielding, and any training exercises to assess whether changes should be made to the product support strategy to—

(1) Optimize the existing support structure.

(2) Reduce O&S costs over the life cycle of the materiel.

b. For covered systems, DASA (S) with the MATDEV will conduct SRs in accordance with 10 USC 4323.

c. The Deputy Assistant Secretary of the Army for Cost and Economics will conduct cost activities in accordance with AR 70–1 in support of SRs.

d. For all other programs, the MATDEV will conduct SRs ensuring focus on performance of the product support package, actual execution costs, and future O&S planning and funding requirements.

12–8. Other Army reviews
The PSM will brief the PBPSS highlights in the LCSP at each Milestone Army Requirements Oversight Council and Army Systems Acquisition Review Council.

12–9. Integrated product support reporting (sustainment health metrics)
All MATDEVs will use authoritative metrics data from the LIW for materiel availability, materiel reliability, and mean down time. The data will be accessed through the Universal Acquisition Data Display Entry System. The metrics

data will be used as the baseline for Defense Acquisition Management Information Retrieval reporting. Metrics data will include:

a. Materiel availability.
b. Materiel reliability.
c. Ownership costs.
d. Mean down time.

Appendix A

References

Section I

Required Publications

Unless otherwise indicated, DA publications are available on the Army Publishing Directorate website at https://armypubs.army.mil/. DoD issuances are available at https://www.esd.whs.mil/dd/.

AR 70–1
Army Acquisition Policy (Cited in para 1–6*e*(5)(*g*).)

AR 602–2
Human Systems Integration in the System Acquisition Process (Cited in para 4–4*h*(24).)

AR 715–9
Operational Contract Support Planning and Management (Cited in para 4–15*c*.)

AR 750–1
Army Materiel Maintenance Policy (Cited in para 6–6*b*.)

DA Pam 700–28
Independent Logistics Assessments (Cited in para 12–4.)

DA Pam 700–127
Integrated Product Support Procedures (Cited in para 3–1*c*.)

DoDD 5000.01
The Defense Acquisition System (Cited in para 4–4*h*(1).)

DoDI 4245.15
Diminishing Manufacturing Sources and Material Shortages Management (Cited in para 8–13.)

DoDI 5000.02
Operation of the Adaptive Acquisition Framework (Cited in para 3–2*b*.)

DoDI 5000.91
Product Support Management for the Adaptive Acquisition Framework (Cited in para 3–2*b*.)

DoDI 5010.44
Intellectual Property (IP) Acquisition and Licensing (Cited in para 7–1*a*.)

OMB Circular A–94
Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs (Cited in para 4–4*h*(20).) (Available at https://www.whitehouse.gov/omb/circulars/.)

Section II

Related Publications

A related publication is a source of additional information. The user does not have to read a related publication to understand this publication. Unless otherwise indicated, DA publications are available on the Army Publishing Directorate website at https://armypubs.army.mil/. DoD issuances are available at https://www.esd.whs.mil/dd/. MIL–HDBK, SAE, and TECHAMERICA documents are available at https://quicksearch.dla.mil/. The USC is available at https://uscode.house.gov/.

AR 5–11
Management of Army Models and Simulations

AR 11–2
Managers' Internal Control Program

AR 15–1
Department of the Army Federal Advisory Committee Management Program

AR 25–30
Army Publishing Program

AR 40–60
Army Medical Material Acquisition Policy

AR 40–61
Medical Logistics Policies

AR 70–12
Fuels and Lubricants

AR 70–47
Engineering for Transportability Program

AR 70–57
Army Technology Transfer

AR 71–32
Force Development and Documentation Consolidated Policies

AR 73–1
Test and Evaluation Policy

AR 200–1
Environmental Protection and Enhancement

AR 210–25
Vending Facility Program for the Blind on Federal Property

AR 350–1
Army Training and Leader Development

AR 700–18
Provisioning of U.S. Army Equipment

AR 700–141
Hazardous Materials Information Resource System

AR 700–145
Item Unique Identification

AR 710–1
Centralized Inventory Management of the Army Supply System

AR 770–3
Type Classification and Materiel Release

CJCSI 5123.01I
Charter of the Joint Requirements Oversight Council (JROC) and Implementation of the Joint Capabilities Integration and Development System

DA Pam 25–403
Army Guide to Recordkeeping

DA Pam 708–3
Cataloging of Supplies and Equipment, Army Adopted Items of Materiel, and List of Reportable Items (SB 700–20)

DA Pam 770–3
Type Classification and Materiel Release Procedures

DoD Product Support Manager Guidebook
Product Support Manager Guidebook (Available at https://www.dau.edu/tools/product-support-manager-psm-guidebook.)

DoD RAM–C Report Manual
Reliability, Availability, Maintainability and Cost Report Manual (Available at https://www.dau.edu/tools/ram-c-report-manual.)

DoDI 4151.22
Condition-Based Maintenance Plus for Materiel Maintenance

DoDI 5000.75
Business Systems Requirements and Acquisition

DoDI 5000.80
Operation of the Middle Tier of Acquisition (MTA)

DoDI 5000.87
Operation of the Software Acquisition Pathway

MIL–HDBK–470
Designing and Developing Maintainable Products and Systems, Volume 1

MIL–HDBK–502
Product Support Analysis

SAE–AS1390
Level of Repair Analysis (LORA)

SAE–GEIA–STD–0007
Logistics Product Data

SAE–TA–STD–0017
Product Support Analysis

TECHAMERICA–STD–0016
Standard for Preparing a Diminishing Manufacturing Sources and Material Shortages (DMSMS) Management Plan

10 USC 2460
Definition of depot-level maintenance and repair

10 USC 2461
Public-private competition required before conversion to contractor performance

10 USC 2464
Core logistics capabilities

10 USC 2466
Limitations on the performance of depot-level maintenance of materiel

10 USC 2469
Contracts to perform workloads previously performed by depot-level activities of the Department of Defense: requirement of competition

10 USC 2474
Centers of Industrial and Technical Excellence: designation; public-private partnerships

10 USC 3771
Rights in technical data: regulations

10 USC 3772
Rights in technical data: provisions required in contracts

10 USC 4171
Operational test and evaluation of defense acquisition programs

10 USC 4251
Major defense acquisition programs: determination required before Milestone A approval

10 USC 4252
Major defense acquisition programs: certification required before Milestone B approval

10 USC 4321
Development of major defense acquisition programs: sustainment of system to be replaced

10 USC 4323
Sustainment Reviews

10 USC 4324
Life-cycle management and product support

42 USC
The Public Health and Welfare

Section III

Prescribed Forms

This section contains no entries.

Section IV

Referenced Forms

Unless otherwise indicated below, DA forms are available on the Army Publishing Directorate website (https://armypubs.army.mil/). DD forms are available at https://www.esd.whs.mil/directives/forms/.

DA Form 11–2
Internal Control Evaluation Certification

DA Form 2028
Recommended Changes to Publications and Blank Forms

DD Form 1423
Contract Data Requirements List

Appendix B

Internal Control Evaluation for the Integrated Product Support Program

B–1. Function

The function covered by this evaluation is the conduct of the IPS program by PSMs and other functional specialists supporting the IPS program.

B–2. Purpose

The purpose of this evaluation is to assist the senior life cycle logistics personnel within the IPS community in evaluating the application of IPS principles during the acquisition and fielding process.

B–3. Instructions

Answers must be based upon the actual testing of key internal controls (for example, document analysis, direct observation, interviewing, sampling, simulation, and/or others). Answers that indicate deficiencies must be explained and the corrective action indicated in the supporting documentation. These internal controls must be evaluated at least once every 5 years and then certified on DA Form 11–2 (Internal Control Evaluation Certification) (See AR 11–2).

B–4. Test questions

a. Materiel acquisition planning.

(1) Are resource constraints considered in development of CRDs (such as, MANPRINT constraints and technology limitations)?

(2) Are materiel design requirements and constraints considered in program reviews?

(3) Is materiel design considered in source selection to ensure reduction in resource requirements?

(4) Were commercial items or NDIs considered?

(5) Have the recommendations from the MANPRINT assessment and reports been considered and integrated into the acquisition program process where appropriate?

b. Determination and acquisition of product support for Army materiel before fielding.

c. Maintenance concept.

(1) Was the maintenance concept developed during program initiation?

(2) Was the maintenance planning developed during materiel development?

(3) Is maintenance concept based upon the tenets of RCM?

(4) Was the product support package tested and found to be adequate in determining initial fielding requirements?

(5) Does the DMSP comply with 10 USC 2464, core requirements?

(6) During depot maintenance planning, was DSOR analysis documented in the MS C acquisition decision memorandum?

(7) Was an annex added to the LCSP explaining why organic support could not be provided for any materiel requiring contract support personnel in forward maneuver areas?

(8) Was maintenance support available at materiel fielding?

d. Supportability.

(1) Can the proposed selected materiel be operated and maintained by the quantity and skills of people that will be available?

(2) Has a spare and repair parts determination been made?

(3) Are parts being procured or are they now available?

(4) Have spare and repair parts packaging, handling, storage, and transportation requirements been identified and documented? Has military packaging been developed for acquisition baseline requirements for all spare and repair parts? Are weight and dimension data for the end item, its support equipment, components, and spares developed and documented in the cataloging system?

(5) Do these requirements support the capabilities needed in the CRDs?

(6) Is force documentation included?

(7) Was support concept completed and developed by the CAPDEV before assigning the item to the MATDEV?

(8) Did the U.S. Army Medical Command prepare a health hazard assessment report?

(9) Are supply support processes compatible with the single stock fund business process?

(10) Were parts shipped directly to users by the contractor and recorded and captured in standard Army systems?

(11) Was the DLA-owned inventory considered for use before the contractor begins providing support?

e. Support requirements.

(1) Have all the needed support requirements been identified?
(2) Are they being requested?
(3) Has the required TMDE been identified?
(4) Is it being requested or is it under development?
(5) Was the DLA included?
(6) Was host nation support considered?
(7) Was consideration given to how basic sustainment materiel support (food, petroleum, oil, and lubricants, and ammunition) would be provided?

f. Training.

(1) Has the need for training been determined?
(2) Are the training needs within the capabilities of the personnel who will operate and repair the equipment?
(3) Has institutional training capability been established to support initial and follow-on fielding?
(4) Has the need for training devices been determined? Will the required training devices accurately r replicate the materiel's operation?

g. Technical documents.

(1) Has a determination been made on what technical documents are needed?
(2) Are these documents being developed or acquired?
(3) Is the technical data level needed to permit competitive procurement being developed?
(4) Is the data being purchased?
(5) Is the data being reviewed to ensure accuracy?
(6) Are ETMs or IETMs being developed?
(7) Is the LPD being provided to the Army LPDS?

h. Computer resources.

(1) Have materiel and software computer resources been determined?
(2) Are these resources now available to support the materiel and software?
(3) Have PPSS requirements been included in the RSSP?
(4) Was PPSS available at fielding?
(5) Was PPSS verified?
(6) Will PPSS be available for the planned life of the materiel?

i. Transportability.

(1) Has the materiel been given transportability approval?
(2) Will the materiel, as finalized, meet the transportability requirements document?

j. Facility requirements.

(1) Have all facility requirements (training, maintenance, test, and storage) been identified?
(2) Have the requirements been provided to Headquarters (HQ), U.S. Army Corp of Engineers (CEMP–DA) for construction or renovation actions?
(3) Is the facility process being tracked to ensure that facilities will not delay fielding or support?
(4) Have facility requirements been validated by DCS, G–9 and HQ, USACE?
(5) Have facility requirements been identified, defined, validated by COE, and tracked by DCS, G–9 and HQ, USACE?

k. Interoperability.

(1) Are standardization and interoperability constraints and implications considered in the development and acquisition of the materiel?
(2) Was an interoperability certification obtained at FRP?

l. Program documents.

(1) Are required program documents developed to provide sufficient data for making decisions regarding materiel structure and directions?
(2) Are T&E data sufficient to make program decisions regarding materiel capabilities or deficiency corrections?
(3) Does the MATDEV have plans for managing, sustaining, and upgrading the materiel throughout the life cycle?
(4) If a contractor PBPSS approach is used, is it supported by an APSA?
(5) Was materiel fielding planning completed before the production contract was signed?
(6) Does the materiel fielding planning address unit set fielding issues?
(7) Does the MATDEV have a listing of support facility programming documents?
(8) Was facilities acquisition funding considered for planning and design environmental studies and construction?

m. Funding.

(1) Is sufficient funding programmed to perform the acquisition and product support actions planned?

(2) Do IPS costs include costs of both contractor and government IPS efforts?
(3) Were requirements for HAZMAT in materiel designs kept to an absolute minimum?
n. Logistics support after fielding.
(1) Are materiel fielding actions adequate to field and support the materiel on schedule?
(2) Was the materiel post-fielding assessment (SR) planned (or was one conducted) to ensure adequate IPS support is available?
(3) Was unit set fielding adequately addressed?

B–5. Supersession

This evaluation replaces the evaluation for AR 700–127, dated 22 October 2018.

B–6. Comments

Help make this a better review tool. Submit comments to the ASA (ALT) (SAAL–ZL) via email at usarmy.pentagon.hqda-asa-alt.mbx.asa-alt-publication-updates@army.mil.

Glossary

Section I

Abbreviations

AAE
Army Acquisition Executive

AAF
adaptive acquisition framework

ABCD
Army bulk condition-based maintenance data

ACAT
acquisition category

ACOM
Army command

AILA
Army integrated logistics architecture

AIPSEC
Army Integrated Product Support Executive Committee

AMC
U.S. Army Materiel Command

AoA
analysis of alternatives

APSA
analysis of product support alternatives

AR
Army regulation

ARIMS
Army Records Information Management System

ARNG
Army National Guard

AS
acquisition strategy

ASA (ALT)
Assistant Secretary of the Army (Acquisition, Logistics and Technology)

ASA (FM&C)
Assistant Secretary of the Army (Financial Management and Comptroller)

ASA (IE&E)
Assistant Secretary of the Army (Installations, Energy and Environment)

ASCC
Army service component command

ASD (S)
Assistant Secretary of Defense for Sustainment

ASIOE
associated support items of equipment

ATEC
U.S. Army Test and Evaluation Command

AWCF
Army working capital fund

BCA
business case analysis

BOIP
basis of issue plan

BOIPFD
basis of issue plan feeder data

CAPDEV
capability developer

CBM+
condition-based maintenance plus

CDA
core depot assessment

CDD
capability development document

CDR
critical design review

CDRL
Contract Data Requirements List

CG
commanding general

CIO
Chief Information Officer

CJCSI
Chairman of the Joint Chiefs of Staff instruction

CLA
core logistics analysis

CLS
contractor logistics support

CMI
component major item

COE
Chief of Engineers

CPD
capability production document

CRD
capability requirements document

CRLCMP
computer resources life cycle management plan

CTM
central tool manager

DA
Department of the Army

DA Pam
Department of the Army pamphlet

DAE
Defense Acquisition Executive

DASA (S)
Deputy Assistant Secretary of the Army for Sustainment

DBS
defense business system

DCS
Deputy Chief of Staff

DD Form
Department of Defense form

DEMIL
demilitarization

DID
data item description

DLA
Defense Logistics Agency

DLR
depot level reparable

DMSMS
diminishing manufacturing sources and material shortages

DMSP
depot maintenance support plan

DMWR
depot maintenance work requirement

DoD
Department of Defense

DoDD
Department of Defense directive

DoDI
Department of Defense instruction

DPAMMH
direct-productive annual maintenance manhours

DRU
direct reporting unit

DSOR
depot source of repair

EAD
early abbreviated demonstration

EMD
engineering and manufacturing development

ESOH
environment, safety, and occupational health

ETM
electronic technical manual

FAR
Federal Acquisition Regulation

FMECA
failure mode, effects, and criticality analysis

FOC
full operational capability

FRP
full-rate production

GEIA
Government Electronics and Information Technology Association

HAZMAT
hazardous materials

HQ
headquarters

HQDA
Headquarters, Department of the Army

ICD
initial capabilities document

ICS
interim contractor support

IETM
interactive electronic technical manual

ILA
independent logistics assessment

IMCOM
U.S. Army Installation Management Command

INSCOM
Intelligence and Security Command

IOC
initial operational capability

IOT&E
initial operational test and evaluation

IP
intellectual property

IPS
integrated product support

IPT
integrated product team

JCIDS
Joint Capabilities Integration and Development System

KPP
key performance parameter

KSA
key system attribute

LCC
life cycle cost

LCCS
life cycle contractor support

LCMC
life cycle management command

LCSP
life cycle sustainment plan

LD
logistics demonstration

LDAC
Logistics Data Analysis Center

LIN
line item number

LIW
Logistics Information Warehouse

LORA
level of repair analysis

LPD
logistics product data

LPDS
Logistics Product Data Store

MANPRINT
manpower and personnel integration

MARC
manpower requirements criteria

MATDEV
materiel developer

MCA
major capability acquisition

MDA
milestone decision authority

MDAP
Major Defense Acquisition Program

MDD
materiel development decision

MDR
milestone decision review

MI
market investigation

MIL–HDBK
military handbook

MISM
major item system map

MISMO
Maintenance Inter-Service Management Office

MS
milestone

MTA
middle-tier acquisition

NDI
nondevelopmental item

NET
new equipment training

NMWR
national maintenance work requirement

O&S
operations and support

OIPT
overarching integrated product team

OMB
Office of Management and Budget

PBA
performance-based agreement

PBPSS
performance-based product support strategy

PEO
program executive officer

PEO STRI
Program Executive Office for Simulation, Training, and Instrumentation

PFSA
post-fielding support analysis

PM
program manager

POM
program objective memorandum

PPP
public-private partnership

PPSS
post-production software support

PSA
product supportability analysis

PSI
product support integrator

PSM
product support manager

PSMIPT
product support management integrated process team

PSP
product support provider

PWS
performance work statement

RAM
reliability, availability, and maintainability

RAM–C
reliability, availability, and maintainability–cost

RCM
reliability centered maintenance

RF
rapid fielding

RFP
request for proposal

RP
rapid prototyping

RPSTL
repair parts and special tools list

RRS–A
Records Retention Schedule–Army

RSSP
replaced system sustainment plan

SAMP
simplified acquisition management plan

SB
supply bulletin

SEP
systems engineering plan

SFA
support facility annex

SKOT
sets, kits, outfits, and tools

SLAMIS
Standard Study Number-Line Item Number Automated Management and Integrating System

SME
subject matter expert

SML
sustainment maturity level

SOO
statement of objectives

SOW
statement of work

SR
sustainment review

T&E
test and evaluation

T/TD
trainer/training developer

T2S
transition to sustainment

TDA
table of distribution and allowances

TEMP
test and evaluation master plan

TM
technical manual

TMDE
test, measurement, and diagnostic equipment

TRADOC
U.S. Army Training and Doctrine Command

TSG
The Surgeon General

UCA
urgent capability acquisition

USACE
U.S. Army Corps of Engineers

USAFMSA
U.S. Army Force Management Support Agency

USAR
U.S. Army Reserve

USARC
U.S. Army Reserve Command

USC
United States Code

WIPT
working-level integrated product team

ZLIN
developmental line item number

Section II

Terms

Acquisition strategy
Describes the PM's plan to achieve program execution and programmatic goals across the entire program life cycle. Summarizes the overall approach to acquiring the capability (to include the program schedule, structure, risks, funding, and the business strategy). Contains sufficient detail to allow senior leadership and the MDA to assess whether the strategy makes good business sense, effectively implements laws and policies, and reflects management's priorities. Once approved by the MDA, the AS provides a basis for more detailed planning. The strategy evolves over time and should continuously reflect the current status and desired goals of the program.

Affordability
A determination that the LCC of an acquisition program is in consonance with the long-range investment and force structure plans of the DoD or individual DoD components. Conducting a program at a cost constrained by the maximum resources that the DoD or DoD component can allocated to that capability.

Analysis of alternatives
The AoA assesses potential materiel solutions to satisfy the capability need documented in the approved ICD. It focuses on identification and AoA, measures of effectiveness, cost, schedule, concepts of operations, and overall risk, including the sensitivity of each alternative to possible changes in key assumptions or variables. The AoA also assesses critical technology elements associated with each proposed materiel solution, including technology maturity, integration risk, manufacturing feasibility, and, where necessary, technology maturation and demonstration needs. The AoA is conducted during the Materiel Solution Analysis Phase of the Defense Acquisition System, is a key input to the CDD, and supports the materiel solution decision at MS A.

Analysis of product support alternatives
The APSA assesses potential product support alternatives and provides a business case to aid the MATDEV in the decision process and validating the alternative selected. The APSA evaluates the feasibility of alternatives, risk, cost, sensitivity to changes in the alternatives, and other relevant considerations such as statutory requirements.

Army Integrated Logistics Architecture
The AILA Framework is a capabilities-based DoD Architecture Framework architecture comprised of capability, operational, and technical (standards) viewpoints. AILA viewpoints provide the framework with which systems and services viewpoints from a MATDEV are integrated to complete the AILA for a particular system.

Associated support items of equipment
ASIOE are items of equipment dedicated to support the major end item to maintain, operate, or test it.

Availability
Availability is the measure of the degree to which an item is in an operable state and can be committed at the start of a mission when the mission is called for at an unknown (random) point in time.

Capability developer
A person who is involved in analyzing, determining, prioritizing, and documenting requirements for doctrine, organization, training, materiel, leader development and education, personnel, facilities, and policy implications within the context of the force development process. Also responsible for representing the end user during the full development and life cycle process and ensures all enabling capabilities are known, affordable, budgeted, and aligned for synchronous fielding and support. The CAPDEV is the command or agency that formulates warfighting requirements for doctrine, organization, training, materiel, leadership, personnel, facilities, and policy. The acronym CAPDEV may be used generically to represent the user and user maintainer role in the materiel acquisition process (counterpart to generic use of MATDEV).

Common Logistics Operating Environment
A standards-based logistics information technology environment that is underpinned by capability, operational, and standards viewpoint based on the DoD Architecture Framework. These viewpoints provide the basis for interoperability, net-centricity and CBM+ functionality.

Component major item
A CMI is an item that has been modified for the major end item; it is a part of the BOIP item configuration. End items used as a component are not listed separately in authorization documents; they take on the identity of the BOIP item. CMIs normally are installed or removed at depot level when the materiel is being built due to wiring, mounting, and system interface; are the primary item in the assembly or set configuration and removal will destroy the identity and integrity of the assemblage or set. An example is a trailer/shelter that is modified and then embedded in the major end item. CMI may also be created when component removal has been exempted by USAFMSA.

Computer resources
Facilities, hardware, software, and manpower needed to operate and support embedded and standalone computer systems, including post-deployment software support requirements and planning.

Computerized Optimization Model for Predicting and Analyzing Support Structures
Computerized Optimization Model for Predicting and Analyzing Support Structures is a personal computer-based computer model designed to assist in conducting a LORA study. The Computerized Optimization Model for Predicting and Analyzing Support Structures is the Army approved system level LORA model.

Condition-based maintenance plus
A collaborative DoD readiness initiative focused on the development and implementation of data analysis and sustainment technology capabilities to improve weapon system availability and achieve optimum costs across the enterprise. The application and integration of appropriate processes, technologies, and knowledge-based capabilities to improve the reliability and maintenance effectiveness of DoD systems and components.

Contractor logistics support
Contracted weapon system sustainment that occurs over the life of the weapon system and generally covering multiple IPS elements. CLS does not include ICS, a temporary measure for a system's initial period of operation before a permanent form of support is in place, but may include performance-based logistics product support strategies and PPP arrangements.

Core depot assessment
A CDA is an analytical process, based upon the results of the CLA, that determines whether or not a weapon system can be supported by existing organic capability or requires new capability to: repair, overhaul, modify, or restore a weapon system and its components. The CDA is used to ensure an organic capability is developed when it does not exist to ensure that the Army/Nation has a ready and controlled source of technical competence and the resources necessary to ensure effective and timely response to a mobilization, national defense contingency situation and other emergency requirements.

Core logistics analysis
A methodology to identify and quantify the workloads to support the system's core logistics capabilities.

Cost Analysis Strategy Assessment Model
Cost Analysis Strategy Assessment that is a model is a LCC and total ownership cost decision support tool. The Cost Analysis Strategy Assessment can present the total cost of ownership depending on user selections: including cost of research, development, T&E; acquisition/production; operating/support; and disposal. Cost Analysis Strategy Assessment covers the entire life of the materiel, from its initial research costs to those associated with yearly maintenance, as well as spares, training costs, and other expenses.

Cost consciousness (cost as an independent variable)
Cost consciousness is an AS focusing on cost-performance tradeoffs in setting program goals and formalizes the process to achieve an affordable balance between performance and schedule.

Demilitarization
The act of eliminating the functional capabilities and inherent military design features from DoD and U.S. Coast Guard personal property, DEMIL requires certification and verification. DEMIL methods and degrees range from removal and destruction of critical features to total destruction by cutting, crushing, shredding, melting, burning, and so on. DEMIL is required to prevent property from being used for its originally intended purpose and to prevent the release of inherent design information that could be used against the United States. DEMIL applies to DoD and U.S. Coast Guard personal property in both serviceable and unserviceable condition(s).

Demilitarization and disposal plan
Documents the requirements for DEMIL and disposal of materiel.

Depot source of repair analysis
A DSOR analysis is an analytical process used to determine the best repair activity for the complete repair, overhaul, modification, or restoration of weapon system or nonconsumable components for noncore workloads. The process considers the maintenance plan, LORA, CLA, repair capabilities of each repair activity, resources, and skills. A DSOR uses a best value analysis to determine the source of repair(s)

Facilities
The permanent or semipermanent real property assets specifically required to support the materiel, including facilities for training, equipment storage, maintenance, contractor, ammunition storage, mobile shop storage, classified storage, troop housing, fuels and lubricant storage, and special facility requirements.

First unit equipped date
The first scheduled date for handoff of a new materiel in a major command.

Full operational capability
In general, FOC is attained when all units and/or organizations in the force structure scheduled to receive a materiel have received it and have the ability to employ and maintain it. The specifics for any particular materiel FOC are defined in that materiel's CDD and CPD.

Hazardous material
A material as defined by Federal Standard, Material Safety Data, Transportation Data and Disposal Data for HAZMAT Furnished to government activities (see FED–STD–313F). See AR 200–1 for further guidance.

Human factors engineering
The systematic application to materiel design and engineering of relevant factors concerning human characteristics. These factors include skill capabilities; performance; anthropometric data; biomedical factors; and training implications to materiel development, design, AS, and manning.

Independent logistics assessment
An analysis of a program's supportability planning conducted by an independent and impartial team of SMEs not directly associated with the program being assessed. It is an effective and valid assessment of the program office's product support strategy, as well as an assessment of how this strategy leads to successfully operating a system at an affordable cost.

Initial operational capability
In general, attained when some units and/or organizations in the force structure scheduled to receive a system have received it and have the ability to employ and maintain it. The specifics for any particular system IOC are defined in that system's CDD and updated CDD.

Initial operational test and evaluation
Dedicated operational T&E conducted on production, or production representative articles, to determine whether systems are operationally effective and suitable, and which supports the decision to proceed beyond low rate initial production.

Integrated product support
A key life cycle management enabler, IPS is the package of support functions required to deploy and maintain the readiness and operational capability of major weapon systems, subsystems, and components, including all functions related to weapon systems readiness. The package of product support functions related to weapon system readiness, which can be performed by both public and private entities, includes the tasks that are associated with the IPS elements which scope product support.

Interim contractor support
Temporary contractor support in lieu of organic capability for a predetermined time (generally not to exceed 3 years) that allows a Service to defer investment in all or part of required support resources (spares, technical data , support equipment, training equipment, and so on), while an organic support capability is phased in. ICS includes the use of commercial support resources and the use of contractor support for initial fielding and also is a method of support used in compressed or accelerated acquisition programs.

Joint Capabilities Integration and Development System
Supports the Chairman of the Joint Chiefs of Staff and the Joint Requirements Oversight Council in identifying, assessing, and prioritizing joint military capability requirements.

Level of repair analysis
The process used to determine the most effective and efficient echelon by which to perform maintenance on the system. Also known as repair level analysis.

Life cycle cost
For a defense acquisition program, LCC consists of research and development costs, investment costs, O&S costs, and disposal costs over the entire life cycle. These costs include not only the direct costs of the acquisition program, but also include indirect costs that logically would be attributed to the program. In this way, all costs that are logically attributed to the program are included, regardless of funding source or management control.

Life cycle logistician
An individual supporting IPS planning, implementation, surveillance, and evaluation for an acquisition program.

Life cycle sustainment plan
The detailed product support plan, including sustainment metrics, risks, costs, and analyses used to deliver the performance-based best value strategy covering the IPS elements.

Logistician
An individual supporting one of the logistics functional disciplines in supply, maintenance, and transportation.

Logistics footprint
The Government and contractor size or "presence" of logistics support required to deploy, sustain, and move a materiel. Measurable elements include inventory, equipment, tools, personnel, facilities, transportation assets, and real estate.

Logistics Information Warehouse
The LIW is the single authoritative source for all Army leaders to maintain situational awareness of equipment around the Army. The LIW is a repository for Army logistics data that provides a common location for all Army materiel stakeholders to access, acquire, and deliver data and information for managing Army materiel. The LIW integrates

legacy materiel data with data emerging from modern Army enterprise resource planning systems to provide critical strategic business analytics and business intelligence for the logistics leaders and provides detailed insight into equipment availability, maintenance reporting, and the overall performance of the Army supply pipeline.

Logistics product data
That portion of product support analysis documentation consisting of detailed data pertaining to the identification of product support resource requirements of a product. Depending upon specific program requirements, this data may be in the form of summary reports, a set of specific data products, or both.

Logistics Product Data Store
The LPDS is the Army's central repository for LPD. The LPDS provides for storing, viewing, and analyzing of the IPS data required to fully support systems throughout the life cycle. The LPDS Application, accessible through the LIW, provides users the ability to view, upload, and generate reports for LPD; as well as perform life cycle metrics and analyses utilizing data in LPDS, LIW, and other enterprise resource planning systems.

Maintainability
Maintainability is the ability of an item to be retained in, or restored to, a specified condition when maintenance is performed by personnel having specified skill levels, using prescribed procedures and resources, at each prescribed level of maintenance and repair.

Maintenance planning
The process conducted to evolve and establish maintenance/support concepts and requirements for the life cycle of a materiel system. One of the traditional elements of logistics support.

Manpower
Total persons available and fitted for service. Indexed by requirements including jobs lists, slots, or billets characterized by descriptions of the required people to fill them.

Manpower and personnel
One of the 12 IPS elements. The identification and acquisition of personnel (military and civilian) with the skills and grades required to operate, maintain, and support systems over their lifetime. The terms "manpower" and "personnel" are not interchangeable. Manpower represents the number of personnel or positions required to perform a specific task. Personnel is indicative of human aptitudes (cognitive, physical, and sensory capabilities), knowledge, skills, abilities, and experience levels that are needed to properly perform job tasks.

Manpower and personnel integration
The entire process of integrating the full range of human factors engineering, manpower, personnel, training, health hazard assessment, system safety, and Soldier survivability throughout the materiel development and acquisition process to ensure optimum total materiel performance.

Materiel
All items necessary to equip, operate, maintain, and support military activities without distinction as to its application for administrative or combat purposes. The materiel includes the logistics support hardware and software being developed and acquired to support the mission-performing equipment.

Materiel availability
One of the components of the sustainment KPP, defined as the percentage of the total inventory of a system operationally capable, based on materiel condition, of performing an assigned mission. This can be expressed mathematically as (the number of operational end items divided by the total population). Materiel availability also indicates the percentage of time that a materiel is operationally capable of performing an assigned mission and can be expressed as (uptime divided by uptime plus downtime).

Materiel change
All efforts to incorporate a hardware or software change to a materiel in production and in the field, involving engineering, testing, manufacture, acquisition, and application to improve or enhance its capability to perform its mission, to be produced more effectively, or to better achieve the design-to-cost goal. These changes have historically been referred to as product improvements, modifications, conversions, reconfiguration, or retrofits.

Materiel command
The command responsible for national-level (for example, wholesale) logistics support of fielded materiel. This includes national maintenance point, national inventory control point, depot, and technical assistance functions. In most instances, the command is AMC.

Materiel developer
A command or agency responsible for research and development, production, and fielding of a new materiel system.

Materiel integration
The processes of type classification and materiel release used to integrate new materiel into the Army's structure to ensure the materiel is safe, suitable, and supportable.

Milestone decision authority
Designated individual with overall responsibility for a program. The MDA will have the authority to approve entry of an acquisition program into the next phase of the acquisition process and will be accountable for cost, schedule, and performance reporting to higher authority, including Congressional reporting.

Operational availability
The degree (expressed as a decimal between 0 and 1, or the percentage equivalent) to which one can expect a piece of equipment or weapon system to work properly when it is required, that is, the percent of time the equipment or weapon system is available for use. Operational availability (AO) represents system "uptime" and considers the effect of reliability, maintainability, and mean logistics delay time (MLDT). AO may be calculated by dividing mean time between maintenance (MTBM) by the sum of the MTBM, mean maintenance time (MMT), and MLDT; that is, AO = MTBM ÷ (MTBM + MMT + MLDT) It is the quantitative link between readiness objectives and supportability.

Operations and support cost
LCC of a materiel covering the operation and support required for the materiel over its operational (useful) life.

Packaging, handling, storage, and transportation
One of the 12 IPS elements. The combination of resources, processes, procedures, design, considerations, and methods to ensure that all system, equipment, and support items are preserved, packaged, handled, and transported properly, including environmental considerations, equipment preservation for the short and long storage, and transportability. Some items require special environmentally controlled, shock isolated containers for transport to and from repair and storage facilities via all modes of transportation (land, rail, air, and sea).

Post-fielding support analysis
A "re-engineering logistics" initiative that was developed to improve communication and logistics support between the MATDEV and major subordinate command communities for Army materiel. It provides a statistical method for tracking logistics metrics throughout the life cycle. PFSA uses data captured in field performance databases such as the Logistics Integrated Database, acquisition databases, and other user-owned data sources. This data is used to create an analysis capability for Army MATDEVs, major subordinate commands, and field organizations to better manage and solve logistics and readiness problems. The PFSA itself keeps track of data availability and level of fidelity (fleet, organizational, serial numbered item) of the data to ensure related metrics and drilldowns are consistent.

Post-production support
Systems management and support activities necessary to ensure continued attainment of system readiness objectives with economical logistics support after cessation of production of the end item (weapon system or equipment).

PowerLOGJ
PowerLOGJ is a logistics data management tool that satisfies requirements for LPD and PSA. PowerLOGJ can be used to develop, evaluate, review, and integrate logistics data for materiel and generate logistics support summaries such as the RPSTLs, maintenance allocation chart, task analysis, provisioning technical documentation, bill of materials, FMECA, and another 38 reports (45 logistic product reports in all).

Product support analysis
The analysis required to create the package of support functions required to field and maintain the readiness and operational capability of major weapon systems, subsystems, and components, including all functions related to weapon system readiness.

Product support integrator
An entity within the Federal Government or outside the Federal Government charged with integrating all sources of product support, both private and public, defined within the scope of a product support arrangement. A PSI can also serve as a PSP.

Product support manager
The individual responsible for managing the package of support functions required to field and maintain the readiness and operational capability of major weapon systems, subsystems, and components, including all functions related to weapon system readiness, in support of the PM's life cycle management responsibilities

Product support package
The IPS elements and any sustainment process contracts or agreements used to attain and sustain the maintenance and support concepts needed for materiel readiness.

Product support provider
An entity that provides product support functions. The term includes an entity within DoD, an entity within the private sector, or a partnership between such

Prognostics
The use of data in the evaluation of a materiel for determining the potential for impending failures.

Program management documentation (formerly development/program management plan)
Documents prepared by the CAPDEV and MATDEV that record program decisions; contain the user's requirement; provide the life cycle plans for development, testing, production, and support of the materiel. Used for all acquisitions. An audit trail provided by documents of record that shows all phases of planning and program execution.

Reliability
A measure of the probability that the system will perform without failure over a specific interval, under specified conditions.

Reliability centered maintenance
A logical, structured process used to determine the optimal failure management strategies for any system based upon system reliability characteristics and the intended operating context. RCM defines what must be done for a system to achieve the desired levels of safety, operational readiness, and environmental soundness at best cost. RCM is a continuous process that requires sustainment throughout the life cycle of a system, utilizes data from the results achieved, and feeds this data back to improve design and future maintenance.

Reliability, availability, maintainability, and cost rationale report
For MDAPs, the PM prepares a preliminary RAM–C rationale report in support of the MS A decision. This report provides a quantitative basis for reliability requirements, and improves cost estimates and program planning. This report is attached to the SEP at MS A, and updated in support of the development request for proposal release decision point, MS B, and MS C. The RAM–C report also documents the quantitative basis for the three elements of the sustainment KPP as well as the tradeoffs made with respect to system performance.

Replaced system sustainment plan
A component approved plan applicable to MDAPs that provides information on the sustainment of an existing system that the system under development is intended to replace. Submitted as an attachment to the LCSP. The plan identifies the budgeting required to sustain the existing system until the system being developed under the MDAP is fielded and assumes the majority of the responsibility for the mission of the existing system.

Retention objective
The retention objective is the quantity of major end items of equipment the Army will retain once procurement is complete to support life cycle management. The retention objective will be established and replace the Army Acquisition Objective when procurement is complete and the program has reached its full operation capability. The retention objective is determined by the DCS, G–3/5/7 and the DCS, G–8.

Standardization and interoperability
a. *Standardization*. The process of developing and agreeing on (by consensus or decision) uniform engineering criteria for products, processes, practices, and methods for achieving compatibility, interoperability, interchangeability, or commonality of materiel.
b. *Interoperability*. The ability of systems, units, or forces to provide data, information, materiel, and services to, and accept the same from, other systems, units, or forces, and to use the data, information, materiel, and services exchanged to enable them to operate effectively together.

Supply support
One of the 12 IPS elements. The management actions, procedures, and techniques necessary to determine requirements to acquire, catalog, receive, store, transfer, issue, and dispose of spares, repair parts, and supplies. Supply support

includes provisioning for initial support, as well as acquiring, distributing, and replenishing inventories. Proper supply support management results in having the right spares, repair parts, and all classes of supplies available, in the right quantities, at the right place, at the right time, at the right price.

Support equipment
One of the 12 IPS elements. All equipment (mobile or fixed) required to support the operation and maintenance of a system. It includes but is not limited to ground handling and maintenance equipment, trucks, air conditioners, generators, tools, metrology and calibration equipment, and manual and automatic test equipment. During the acquisition of systems, PMs are expected to decrease the proliferation of support equipment into the inventory by minimizing the development of new support equipment and giving more attention to the use of existing government or commercial equipment.

Supportability
A key component of 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.

Sustainment-level maintenance
Materiel maintenance that cannot be accomplished at the field/unit level. Such operations include (but are not limited to): inspections, calibration, platform/component major overhaul or rebuild, and capability upgrades through recapitalization. Sustainment maintenance supports field/unit-level maintenance by providing technical assistance and performing that maintenance beyond their authority. Sustainment maintenance provides stocks of serviceable components and end items by virtue of having more extensive facilities/capacity for repair than what is available at lower level maintenance activities. Sustainment maintenance includes all aspects of post-production software maintenance.

System readiness objectives
A criterion for assessing the ability of a system to undertake and sustain a specified set of missions at planned peacetime and wartime utilization rates. System readiness measures take explicit account of the effects of reliability and maintainability system design, the characteristics and performance of the support system, and the quantity and location of support resources. Examples of system readiness measures are combat sortie rate over time, peacetime mission capable rate, operational availability, and asset ready rate

Systems Planning and Requirements Software
Systems Planning and Requirements Software is a web-based, multi-service expert system that assists MATDEVs and PSMs in preparation of IPS, supportability planning, and other acquisition and program management documentation. Systems Planning and Requirements Software is designed to enhance productivity and accuracy in program management planning and performance by providing users with a suite of expertly developed modules that assist in building program planning documents. Through tailored interactive question and answer sessions, Systems Planning and Requirements Software assists users in systematically considering all issues pertinent to an acquisition program. The decision networks embedded within are designed to establish program management and supportability strategy and develop the associated tailored program planning documentation. Through tailored interactive question and answer sessions, Systems Planning and Requirements Software assists the user in systematically considering all issues pertinent to his or her acquisition program. The decision networks embedded within Systems Planning and Requirements Software lead the user through the maze of supportability issues to be considered, and automated consistency checks help the user to avoid inconsistencies in document generation.

Technical data
Recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such as financial and management information (see DFARS 252.227–7013).

Test, measurement, and diagnostic equipment
A test equipment system or device that can be used to evaluate the operational condition of a materiel or component to identify or isolate any actual or potential malfunction. Diagnostic and prognostic equipment, automatic and semiautomatic equipment, and calibration test and measurement equipment is included, whether identifiable as a separate end item or contained within the materiel.

Testability
A design characteristic that allows the functional or operational status of a materiel and the location of any faults within the materiel to be confidently determined in a timely fashion. The status of a materiel refers to whether the

materiel is operable, inoperable, or degraded. Testability applies to all hardware levels of indenture for materiel. To achieve testability goals, attention must be paid to all design indenture levels and to the integration of test and diagnostic strategies between these levels. The application of testability to the design has impacts in all test activities—manufacturing test in the factory environment, operational test during mission phases to determine overall mission capability, and maintenance testing at all maintenance levels or echelons as driven by the maintenance concept requirements.

Training and training devices
The processes, procedures, techniques, and equipment used to train personnel to operate and support a materiel, including individual and crew training, NET, sustainment training at gaining installations, and support for the T/TDs themselves.

Training device
A three dimensional object and associated computer software developed, fabricated, or procured specifically for improving the learning process. Training devices are justified, developed, and acquired to support designated tasks in developmental or approved individual and collective training programs, Soldier manuals, military qualification standards, or Army training and evaluation programs. Training devices are categorized as either system level or non-system level devices. A system training device is designed for use with one system. A non-system training device is designed for general military training or for use with more than one system.

Transition to sustainment
The deliberate, predictable, conditions-based, and informed decision to transfer responsibility to execute select or all sustainment functions for post FRP systems from the MATDEV to the sustainment owner. Transition planning will cover work-year and associated funding requirements post T2S, operation and maintenance funding for software (excludes software in business and tactical systems managed under a continuous integration and delivery model for life cycle, that will not transition to sustainment) and hardware, management regarding licenses, warranties, authority to operate, unique software system requirements, contract management authority, and associated hardware and divestiture recommendations. T2S conditions, timelines, and risk will be agreed to and approved for execution jointly by the PEO and LCMC commander.

Transportability
The inherent capability of an item to be moved efficiently by towing, self-propulsion, or carrier, using equipment that is planned for the movement of the item via rail, highway, water, and air.