

Army Regulation 700–127

Logistics

Integrated Product Support

**Headquarters
Department of the Army
Washington, DC
22 October 2018**

UNCLASSIFIED

SUMMARY of CHANGE

AR 700–127

Integrated Product Support

This mandated revision, dated 22 October 2018—

- o Incorporates Army Directive 2017–31, Acquisition Reform Initiative #5: Aligning Sustainment Policy to Foster Cost Efficiency and Improved Readiness, dated 5 March 2018 (paras 4–1*a*, 4–1*h*(2), 4–16*a*, 6–5*f*, 6–5*g*, 6–10*c*, 7–1, 7–2, 8–2*f*(3), 8–2*f*(4), 12–5, 12–8, and glossary, section II).

Logistics

Integrated Product Support

By Order of the Secretary of the Army:

MARK A. MILLEY
General, United States Army
Chief of Staff

Official:



MARK F. AVERILL
Acting 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 policy implements key provisions of Army Directive 2017–31.

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. Also, it applies to materiel developers, capability developers, and organizations involved in materiel and software acquisition within the Regular Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve. This regulation is applicable during full mobilization, 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 guidance.

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 (see 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), 103 Army Pentagon, Washington, DC 20310–0103.

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) (DASA–APL), 103 Army Pentagon, Washington, DC 20310–0103.

Committee management. AR 15–1 requires the proponent to justify establishing/continuing committee(s), coordinate draft publications, and coordinate changes in committee status with the U.S. Army Resources and Programs Agency, Department of the Army Committee Management Office (AARP–ZA), 9301 Chapek Road, Building 1458, Fort Belvoir, VA 22060–5527. Further, if it is determined that an established “group” identified within this regulation, later takes on the characteristics of a committee, as found in the AR 15–1, then the proponent will follow all AR 15–1 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.

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Chapter 1 General

Section I

Introduction

1–1. Purpose

This regulation prescribes the Department of the Army (DA) policy for implementing performance-based life cycle 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. Additional guidance for implementing this policy is provided in Department of the Army Pamphlet (DA Pam) 700–127 and must be used in conjunction with this regulation. The policy implements PBPSS requirements; defines the process that the materiel developer (MATDEV) will use to develop and integrate a PBPSS with the systems engineering process; identifies the framework (twelve integrated IPS elements) that will be used to develop the PBPSS; assigns responsibilities for developing and implementing PBPSSs for Army materiel and software; and requires MATDEVs to implement metrics to measure product support performance. DA Pam 700–127 provides implementing guidance for this regulation. This policy does not apply to business information technology systems developed and supported under the Business Capability Lifecycle or associated processes.

1–2. References

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.

Section II

Responsibilities

1–5. 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 requirements in the following:
 - (1) Section 2366a, Title 10, United States Code (10 USC 2366a) and 10 USC 2366b.
- e. Assign responsibilities to the Deputy Assistant Secretary of the Army (Acquisition Policy and Logistics (DASA (APL)) 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 LCSPs, ILAs, Computer Resources Life Cycle Management Plan (CRLCMP), and interim contractor support (ICS) to Objective Support Concept Transition Plan.
 - (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 (APL) will—
 - (a) Establish internal procedures and techniques to assess supportability management and execution for assigned acquisition programs.

- (b) Review capability requirement documents (CRDs), IPS related program management documentation, test plans, and contract and solicitation documents to ensure IPS considerations are appropriately addressed.
- (c) Assist 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 IPT (PSMIPT), Test and Evaluation (T&E) Working IPT (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 Army regulation (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 Department of Defense (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 Department of Defense Product Support Manager (PSM) of the Year Award, and the Secretary of Defense Performance-based Logistics Awards Program.

1–6. 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 concurrence and/or feedback to DASA (APL) policy concerning economic analysis.

1–7. 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.

1–8. Assistant Chief of Staff for Installation Management

The ACSIM 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.

1–9. Deputy Chief of Staff, G–1

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

1–10. 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 authorization documents are updated to enable timely fielding of equipment and supplies.
- c. Participate in SRs.

1-11. 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.

1-12. The Chief Information Officer/G-6

The CIO/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 Development System (JCIDS) MS requirements.
- d.* Support the ASA (ALT) through the development of policy on the acquisition of information management, information technology, and information resources. Ensure that acquisitions are managed in a manner that implements CIO/G-6 policies and procedures to maximize value while assessing and managing the risks for acquiring information technology.

1-13. 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.

1-14. 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.

1-15. 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, ACSIM, gaining ACOM, ASCC, and DRUs, 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 1–15*a* through 1–15*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.

1–16. 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.

1–17. 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 Department Center and School. Other CAPDEVs include U.S. Army Intelligence and Security Command (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 RAM, interoperability, operations and support (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 capabilities 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 test and evaluation master plan (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, U.S. Army Reserve (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.
 - c.* Provide a representative to support the AIPSEC.
 - d.* Participate in developing performance-based metrics and desired outcomes in the form of key performance parameters (KPPs), key system attributes (KSAs), and additional performance attributes for CRDs, including working with the PSM to develop appropriate product support arrangements and performance-based arrangements (PBAs).

1–18. 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.

1–19. Materiel commands

The principal materiel command is the U.S. Army Materiel Command (AMC). Other materiel commands include the INSCOM; the Installation Management Command, the U.S. Army Corps of Engineers (USACE); and the U.S. Army Medical Research and Materiel Command. The commanders, materiel commands 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 O&S reviews (OSR) 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 nondevelopmental items (NDI).
 - 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 analyses (CLA), core depot assessments (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 (SALE) 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.

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

The Commander, 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 TEMP and evaluation plan 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 KPP with two subcomponents: Materiel Availability and Operational Availability.
 - (2) Materiel reliability KSA.
 - (3) 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 NDI, 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 milestone 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 milestones) 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 (APL) (SAAL–ZL) and other PSMIPT members. Provide copies for supply class VIII medical materiel to the 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 (APL) or 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 (APL).

1–21. 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 Headquarters (HQ), USACE (CEMP–CI) and gaining ACOM, ARNG, ASCC, USAR, and DRUs 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).

1–22. Commanders, Army commands, Army National Guard, U.S. Army Reserve, Army service component commands, and direct reporting units

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

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) Computer resources.

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 and the following Title 10 United States Code (10 USC) sections: 10 USC 2320; 10 USC 2366a; 10 USC 2366b; 10 USC 2399; 10 USC 2437; 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 Defense 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. Integrated Product Support development

- a.* MATDEVs are responsible for planning and implementing an IPS program as an integral part of assigned materiel acquisition programs. MATDEVs will ensure that passage of a program from one life cycle phase to the next occurs only when product support has been adequately planned and developed.

b. The DOD Product Support Manager Guidebook provides guidance to PSMs assessing the sustainment maturity level (SML) of the product support package. Essential IPS planning considerations and SMLs for each phase are provided in the following paragraphs.

3–3. 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 Chairman of the Joint Chief of Staff Instruction (CJCSI 3170.01) and DOD instruction (DODI) 5000.02 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 life cycle cost. 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.

3–4. 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 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 ASR).

(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.

3–5. 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 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.

3–6. 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.

3–7. 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 & 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.

3–8. 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.

Chapter 4 Product Support Management

Section I

Strategic Approach and Risk Management

4–1. Performance based product support strategies

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

- a.* The PSM is responsible for developing and implementing the PBSS for the MATDEV and documenting it in the LCSP. The PSM will also provide a PBSS summary input for inclusion in the AS which includes the intellectual property strategy.
- b.* All PBSSs will be developed to ensure that reliability, readiness, and cost are optimized through a balanced use of appropriate government (organic), public-private partnerships (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 PBSSs will leverage existing organic product support capabilities to the maximum extent possible while other non-organic support alternatives are considered.
- e.* PBSSs can include TMs, national maintenance work requirements (NMWRs), depot maintenance work requirements (DMWRs), and troubleshooting and repair procedures as performance measurements.
- f.* PBSSs may be implemented on materiel at system level, subsystem level, secondary items, components, assemblies, or subassemblies.
- g.* The PBSS 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 PBSSs will—
 - (1) Enhance the commander's ability to execute missions.
 - (2) Identify and document in the intellectual property strategy the intellectual property (including technical data, computer software documentation, and computer software (to include source and executable code)), and associated rights/license needs. MATDEVs and contracting officers will require priced contract options for technical data and computer software to be delivered during the Technology Maturation and Risk Reduction, Engineering Manufacturing and Development, Production and O&S Phases of the program.
 - (3) Comply with Army policy on contractors accompanying the force set forth in AR 715–9.
 - (4) Support total asset visibility.
 - (5) Comply with DOD policy to use the Defense Transportation System.
 - (6) Use standard Army Logistics Information Systems.
 - (7) Minimize the logistics footprint.

- i.* All PBSSs 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 PBSS will include metrics to measure performance outcomes—
 - (1) Metrics required for all PBSSs—
 - (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 PBSS 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.
 - (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 ACAT I, II, and III programs. The PSM 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 table of distribution and allowances (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 Department of Defense Directive (DODD) 5000.01).
 - (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 intellectual property strategy prior to MS A.
 - (4) Conduct an APSA to determine opportunities where it is operationally and economically feasible to implement PBSSs and will—
 - (a) Use the analysis to validate the assumptions used to develop PBSSs.
 - (b) Develop the APSA (or business case analysis when directed by the MDA) through the PSMIPT.
 - (c) Review APSAs prior to each change in the PBSS or every 5 years, whichever occurs first, and update as required. Updates to the APSA will be coordinated only when there are significant changes to the PBSS.
 - (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 intellectual property 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 PBSSs. Conduct periodic PBSS reviews and adjust where necessary.
 - (b) Document the PBSS and all requirements to implement the strategy in the LCSP.
 - (c) Performance based outcome metrics to assess effectiveness of the PBSS.
 - (d) Intellectual property strategy (part of the AS). Ensure needed technical data and software documentation rights are identified in the intellectual property strategy.
 - (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. DMWRS and NMWRs.
 - (o) CRLCMP.
 - (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 Plan.
 - (v) Plan for Materiel Release.
 - (w) Post Production Support Plan.
 - (x) Item Unique Identification Plan (see AR 700–145).
 - (y) ICS to Objective Support Concept Transition Plan.
 - (z) Post-fielding support analysis (PFSA).

- (aa) Sustainment quad chart (SQC). Report program status at each program review, SR, and each MS.
- (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 obsolete electronic parts that are included in the materiel specifications for the program and approve suitable replacements for such electronic parts.
- (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 the Office of Management and Budget Circular A-94 to determine the preferred PBPSS.
- (21) Ensure materiel integration (see AR 700-142).
- (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 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, systems engineering plan, 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) Intellectual property 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) CAPDEV's representative from all applicable TRADOC schools.

(5) DLA.

(6) COE.

(7) Army Life Cycle Logistician (DASA (APL)) 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 multiservice 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 Department of the Army'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 (APL).

a. The AIPSEC provides advice and counsel to the DASA (APL) 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. Measureable 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 RFPs and PBAs, and that appropriate CDRLs 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) ICS applies only to acquisition programs initiated under an approved CRD (ICD, CDD, or CPD). 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. Normally ICS is funded with procurement appropriation. ICS does not apply to nonstandard equipment (NS–E) that is not an acquisition program and does not have an approved ICD, CDD, or CPD.

(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 NS-E. This applies to the support of NS-E as a sustainment strategy until the materiel is either determined to be an acquisition program and an ICD, CDD, or CPD is approved; or the NS-E capability is sustained or terminated through the HQDA Capability Development for Rapid Transition process. Investment in a permanent support infrastructure is not justified until the final decision for the NS-E is made. Major NS-E is defined as meeting the criteria for an ACAT I or ACAT II program in DODI 5000.02. When major NS-E 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 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 intellectual property strategy. When the work to be performed under contract produces technical data, computer software documentation, and computer software (to include source and executable code), ensure the appropriate contract clauses are included in the contract to acquire the associated rights/licenses to permit competitive procurement (include a CDRL to assure delivery to the government). MATDEVs and contracting officers will require priced contract options for technical data and computer software to be delivered during the Technology Maturation and Risk Reduction, Engineering Manufacturing and Development, Production and O&S Phases of the program.

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 diminishing manufacturing sources and material shortages (DMSMS) planning, technical publications, LPD and PSA data)).

4-17. Planning

a. When ICS is used, the MATDEV will ensure that the LCSP reflects the justification for ICS, the ICS milestones 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 O&S reviews (OSR) at the completion of each of the major milestones to assess the status of transitioning to the objective support concept.

4–18. Reprourement

Policy on executing reprourement 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 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 system interface program required by DODI 5000.02. 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 milestone decision review 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 environment, safety, and occupational health (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 demilitarization and explosive ordnance disposal aspects of the munitions required.
- (2) Concurrently develop of demilitarization 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 life cycle cost 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 military handbook (MIL–HDBK)–502). PSMs will integrate PSA activities as part of the systems engineering IPT and identify the PSA activities in the systems engineering plan. 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) Failure mode, effects, and criticality analysis (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 Manual).

(8) RCM.

(9) APSA.

(10) DMSMS (see SAE GEIA–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 intellectual property 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 reparable (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 ANSI 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 weapon system reviews and operational sustainment reviews to ensure that reliable systems are produced for Soldiers. Contractors supporting the Government are not required to use the standard software tool, but the contractor's tool should be 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 milestone.
 - (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—
 - (1) 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—
 - (2) MDAPs in accordance with 10 USC 2366a.
 - (3) All other weapon systems (see DODI 5000.02).
 - b. The CLA determines core requirements and compliance with 10 USC 2366b and 10 USC 2464. Conduct a CLA—
 - (1) For MDAPs in accordance with 10 USC 2366b.
 - (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 depot level repairables, and software maintenance. The MATDEV will—

- a. Conduct a DSOR in accordance with DODD 4151.18, DODI 4151.ff, 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 DLHs 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 depot level repairable 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 Integrated Product Support 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 5000.02, develop and maintain an intellectual property strategy which will identify, plan and program the short-term and long-term needs for intellectual property (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 intellectual property 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 integrated product support elements) will be included in the intellectual property 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.* The MATDEV will consider the following strategies as part of their intellectual property strategy:
- (1) Use industry days, and so forth, to inform prospective bidders of the product support strategy and plan data needs, and to get industry to recommend alternate intellectual property strategies that would accomplish the Government's sustainment outcomes while minimizing the life cycle cost.
 - (2) Specially negotiated license rights.
 - (3) Priced contract options.
 - (4) Use of escrow accounts.
 - (5) Using data deliverables or data rights/license rights as a source selection factor.
- e.* The intellectual property strategy will be linked to acquisition and sustainment outcomes prior to MS B for all ACAT levels. To determine what intellectual property, 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 (SBIR) rights, or limited/restricted rights).
- f.* When considering any performance-based contracting approach, the program will include in the intellectual property 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).

7-2. Data Management

The PSM will, in accordance with DOD 5010.12-M—

- a.* Develop the appropriate statement of work/objective (SOW/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 Contract Data Requirements List (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 2321).

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 Support Activity (LOGSA) 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 intellectual property 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, repair parts and special tools list, 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 repair parts and special tools lists 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, sets, kits, outfits and tools, 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 10-25). 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, Systems Engineering Plan (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

Every acquisition program is required to develop an LCSP. 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 format in DA Pam 700–127.
- c. Align with the AS, intellectual property strategy, SEP, TEMP, and Corrosion Prevention and Control Plan.
- d. Be coordinated with the—
 - (1) MATVEV 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.
- e. Table 8–1 identifies mandatory annexes to the LCSP.

**Table 8–1
Life Cycle Sustainment Plan mandatory annexes**

Annex ^{2&3}	Title	Milestone	Approval
A	Depot Level Maintenance Analyses and Determinations	A, B & C	MATDEV in coordination with AMC
B	APSA	A, B & C	MDA
C	ILA Report (ACAT I and II)	B, C, Full-Rate Production Decision Review (FRPDR) & SRs	MDA
D ¹	RSSP (MDAP only)	B	MATDEV
E	CRLCMP	B & C	MDA
F	System Demilitarization and Disposal Plan	B & C	MATDEV
G ¹	Preservation and Storage of Unique Tooling (MDAP only)	C	MATDEV
H	Materiel Fielding Plan	C	MATDEV
I	Plan for Materiel Release	C	MATDEV
J	Post Production Support Plan	C	MATDEV
K	ICS to Objective Support Concept Transition Plan	No later than 2 years after FRPDR	MDA
L	Sustainment Quad Chart	At each program review	MATDEV

Notes:

¹ Annexes D and G apply to MDAPs. Other programs may include these annexes in the LCSP at the PSM’s discretion.

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

³ Additional annexes, for example a detailed description of the support approach by IPS element, may be added at the PSM’s discretion.

- f. 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 milestones to include Materiel Integration (type classification and full materiel release) (see AR 700–142).

(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) Transition to sustainment execution conditions and timeline.

g. 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.

h. 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 milestone decision review.

(3) FRP decision.

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

i. 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 Logistics and Materiel Readiness (ASD (L&MR))
I & select II ⁴	MATDEV PSMIPT	ASA (ALT) ⁴ , DCS G–4, DCS G–8, AMC, PEO, LCMC, CAPDEV Representative	DASA(APL)
II & III	MATDEV PSMIPT	PEO, LCMC ⁵ , CAPDEV representative ⁶	PEO

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 nonconcurrence with recommended changes to the LCSP to reach concurrence. The approval authority makes the final decision where full agreement cannot be reached.

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

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

⁴ DASA (APL) approves ACAT IC, IAC, and II programs where the AAE is the MDA, and ACAT IAM programs.

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 PEO 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 sets, kits, outfits, and 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 (CTM) 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 central tool managers are—
 - (1) Program Manager (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 requests for proposals 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 LOGSA 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 TC standard designations, and request LINs for their SKOTs.

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

h. The repair parts and special tools list (RPSTL) in the technical manual 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 and the Vice Chief of Staff of the Army (see AR 70-1).

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 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. Computer Resources Life Cycle Management Plan

PSMs will ensure that the CRLCMP includes all IPS requirements and is updated when requirements change. The plan will be annexed to the LCSP.

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. Operating 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 2437 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 milestone schedule for the development and fielding of the MDAP, including the scheduled dates for lowrate 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 demilitarization 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 700–142.

8–23. Post-production support planning

PSMs will conduct post-production support planning to ensure that, after termination of the production phase, the materiel IPS will meet established readiness and sustainability objectives. The Post Production Support Plan will be reviewed and updated as appropriate when there is a change to the PBPSS, or every 5 years, whichever occurs first.

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 line item number (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 (MOS) 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 LIN (ZLIN) from SLAMIS.

(1) Only a LIN in chapter 2, Army adopted items of materiel and automatic data processing equipment, and chapter 4, developmental and nondevelopmental items, of DA Pam 708–3 (see 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 SSN 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 line item numbers (NSLIN) for nonstandard materiel. Users must request access to AESIP 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) U.S. Army National Guard Force Management Division.

(8) U.S. Army Reserve Command.

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 (APL) 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, associated support items of equipment, 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 700–142, DA Pam 700–142).

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 a 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 700–142).

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 new equipment training (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 environment, safety, and occupational health 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, demilitarization 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 2399, 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 (APL) (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 technical manuals are used for the LD and sufficient for use by representative Soldiers during operation, maintenance, and troubleshooting. Preliminary technical manuals 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 subject matter expert review.

(b) Ensure that technical manuals 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 LOGSA. Both the LD and verification team (MATDEV, LCMC, CAPDEV, ATEC/Army Evaluation Center, and LOGSA) 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 LOGSA 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 milestone 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 technical manual 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 milestone decision reviews.

12-2. Type Classification

MATDEVs are required to type classify their materiel in accordance with AR 700-142.

12-3. Materiel Release

MATDEVs are required to obtain materiel release for their materiel in accordance with AR 700-142.

12-4. Supportability Assessment

MATDEVs will conduct supportability assessments to support in-process reviews and each milestone decision review. 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

PEOs will require an ILA for all ACAT I, ACAT II, and selected ACAT III weapon system programs to ensure that the PBPSS and the resources required to implement the PBPSS will meet CAPDEV requirements. Selected ACAT III programs are determined by the MDA and may be based on special interest, AMC recommendation, and so forth. PEOs are to assign an ILA lead and team of SMEs to conduct the ILA. The ILA team will not include individuals assigned in support of the program under review. 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. Certifications are required at MS B, MS C, FRPDR, post FRP reviews, and prior to SRs. DA Pam 700-28 provides guidance for conducting ILAs. DA Pam 700-28 provides guidance for conducting ILAs for Major Automated Information Systems programs should the PEO wish to have an ILA conducted.

12-6. Department of the Army Integrated Product Support Reviews

MATDEVs with MDAPs will participate in Department of the Army IPS reviews of their programs. The DASA (APL) 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. The MATDEV will conduct SRs to assess the performance of the product support package for materiel. There are generally two types of SRs-weapon system reviews (WSRs) and OSRs.

(1) The WSR is an annual review quad-chaired at the colonel/or civilian GS-15 equivalent by personnel from the ASA (ALT) Deputy Assistant Secretary of the Army (Plans, Programs and Resources) (SAAL-ZR), the DCS, G-8 (FD), the DCS, G-4, and the DCS, G-3/5/7. For programs selected for this review, the WSR synchronizes equipping, sustaining, installation, operating tempo, and personnel (military and civilian) requirements for materiel. It focuses on weapon system funding requirements and is a cross Program Evaluation Group review that occurs following the long range investment requirements analysis each year. The review is done in preparation for development of the POM, to ensure appropriate allocation of resources in the transition to sustainment, and to identify and socialize new requirements competing in the POM process.

(2) The OSR is a formal post-production decision review that focuses on actual execution of the sustainment strategy and future O&S planning and costs. The ACAT level of the program determines who will chair the review. The OSR will occur no later than 2 years after the FRPDR and serve as the final evaluation of O&S planning to ensure that O&S requirements have been completely thought through, can be implemented, and will meet Soldier needs. The OSR will continue to occur every 2 years after the FRPDR until the chair determines that the program has satisfied all requirements for successful O&S implementation. The OSR will evaluate final procurement quantities, transition to sustainment funding, and close out any outstanding acquisition activities.

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

All MATDEVs will report program status using the SQC format and guidance in DA Pam 700–127. The SQC will be supported by the details in the program LCSP.

- a.* Reporting is required—
 - (1) At program initiation.
 - (2) Each subsequent milestone decision review.
 - (3) Production decision.
 - (4) Program reviews and SRs.
- b.* The SQC will reflect the—
 - (1) Product support strategy.
 - (a)* The sustainment approach (current and future).
 - (b)* Issues.
 - (c)* Issue resolution.
 - (2) Sustainment schedule with milestones and key life cycle sustainment events.
 - (3) Metrics data for—
 - (a)* Materiel availability.
 - (b)* Materiel reliability.
 - (c)* Ownership costs.
 - (d)* Mean down time.
 - (4) O&S data as submitted in the Selected Acquisition Report O&S section.
 - c.* 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 SQC metrics data will be used as the baseline for Defense Acquisition Management Information Retrieval reporting.
 - d.* Data sources used to populate the SQC data fields will be in the following priority:
 - (1) Actual field data when available.
 - (2) Test results, modeling, and analysis provided by the independent evaluator when available.
 - (3) Engineering estimates when field or test results, modeling and analysis from the independent evaluator are not available.
 - e.* The SQC will be annexed to the LCSP.

Appendix A

References

Section I

Required Publications

AR 70–1

Army Acquisition Policy (Cited in para 1–5e(5)(g).)

AR 602–2

Human Systems Integration in the System Acquisition Process (Cited in para 4–4h(24).)

AR 715–9

Operational Contract Support Planning and Management (Cited in para 4–1h(3).)

AR 750–1

Army Materiel Maintenance Policy (Cited in para 6–6b.)

DA Pam 700–28

Independent Logistics Assessment (Cited in para 12–4.)

DA Pam 700–127

Integrated Product Support Procedures (Cited in para 1–1.)

DODD 5000.01

The Defense Acquisition System (Cited in para 4–4h(1).) (Available at <http://www.esd.whs.mil/dd/>.)

DODI 5000.02

Operation of the Defense Acquisition System (Cited in para 3–3b.) (Available at <http://www.esd.whs.mil/dd/>.)

Office of Management and Budget Circular A–94

Discount Rates for Benefit-Cost Analysis of Federal Programs (Cited in para 4–4h(20).) (Available at <http://www.gpo.gov/>.)

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. USC publications are available at <http://www.uscode.gov>. DOD publications are available at <http://www.esd.whs.mil/dd/>.

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 Standardization Policy for Equipment Design, Operation, and Logistics Support

AR 70–47

Engineering for Transportability Program

AR 71–32

Force Development and Documentation

AR 73–1

Test and Evaluation Policy

AR 200–1

Environmental Protection and Enhancement

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 700–142

Type Classification, Materiel Release, Fielding, and Transfer

AR 700–145

Item Unique Identification

AR 710–1

Centralized Inventory Management of the Army Supply System

CJCSI 3170.01I

Joint Capabilities Integration and Development System

DA Pam 700–142

Instructions for Type Classification, Materiel Release, Fielding and Transfer

DA Pam 708–3

Cataloging of Supplies and Equipment, Army Adopted Items of Materiel, and List of Reportable Items (SB 700–20)

DOD Product Support Manager Guidebook

Product Support Manager Guidebook

(Available at [https://www.dau.mil/tools/t/product-support-manager-\(PSM\)-Guidebook.](https://www.dau.mil/tools/t/product-support-manager-(PSM)-Guidebook.))

DOD RAM–C Manual

Reliability, Availability, Maintainability and Cost Rationale Manual

(Available at <https://www.dau.mil/tools/t/ram-c-report-manual.>)

DODI 4151.22

Condition Based Maintenance Plus (CBM+) for Materiel Maintenance

DODI 5000.67

Prevention and Mitigation of Corrosion on DOD Military Equipment and Infrastructure

DODI 7041.03

Economic Analysis for Decision-Making

MIL–HDBK–470

Designing and developing maintainable products and systems, Volume 1 (Available at [http://quicksearch.dla.mil/.](http://quicksearch.dla.mil/))

MIL–HDBK–502

Product Support Analysis (Available at [http://quicksearch.dla.mil/.](http://quicksearch.dla.mil/))

SAE AS1390

Level of Repair Analysis (LORA) (Available at [http://quicksearch.dla.mil/.](http://quicksearch.dla.mil/))

SAE GEIA–STD–0007

Logistics Product Data (Available at [http://quicksearch.dla.mil/.](http://quicksearch.dla.mil/))

SAE GEIA–STD–0016

Diminishing Manufacturing Sources and Materiel Shortages (Available at [http://quicksearch.dla.mil/.](http://quicksearch.dla.mil/))

SAE TA–STD–0017

Product Support Analysis (Available at <http://quicksearch.dla.mil/>.)

TA–STD–0017

Product Support Analysis (This is an SAE International standard.) (Available at <http://quicksearch.dla.mil/>.)

10 USC 2302

Definitions

10 USC 2320

Rights in Technical Data

10 USC 2321

Validation of Proprietary Data Restrictions

10 USC 2366a

Major Defense Acquisition Programs: Certification Required Before Milestone A Approval

10 USC 2366b

Major Defense Acquisition Programs: Certification Required Before Milestone B Approval

10 USC 2399

Operational Test and Evaluation of Defense Acquisition Programs

10 USC 2437

Development of Major Defense Acquisition Programs: Sustainment of System to be Replaced

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 Material

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

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 (<http://www.armypubs.army.mil>).

DA Form 11–2

Internal Control Evaluation Certification

DA Form 2028

Recommended Changes to Publications and Blank Forms

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 FD 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 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, 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 ACSIM and HQ, USACE?
- (5) Have facility requirements been identified, defined, validated by COE, and tracked by ACSIM 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 26 March 2012.

B-6. Comments

Help make this a better review tool. Submit comments to the ASA (ALT) (SAAL-ZL), 103 Army Pentagon, Washington, DC 20310-0103.

Glossary

Section I

Abbreviations

AAE

Army Acquisition Executive

ABCD

Army bulk condition-based maintenance data

ACAT

acquisition category

ACOM

Army command

ACSIM

Assistant Chief of Staff for Installation Management

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

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 (L&MR)

Assistant Secretary of Defense (Logistics and Materiel Readiness)

ASIOE

associated support items of equipment

ATEC

U.S. Army Test and Evaluation Command

AWCF

Army working capital fund

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

CIO/G-6

Chief Information Officer/G-6

CLA

core logistics analysis

CLS

contractor logistics support

CMI

component major item

COE

Chief of Engineers

CPD

capabilities production document

CRD

capability requirement document

CRLCMP

Computer Resources Life Cycle Management Plan

CTM

central tool manager

DA

Department of the Army

DAE

Defense Acquisition Executive

DASA (APL)

Deputy Assistant Secretary of the Army (Acquisition Policy and Logistics)

DCS, G-1

Deputy Chief of Staff, G-1

DCS, G-3/5/7

Deputy Chief of Staff, G-3/5/7

DCS, G-4

Deputy Chief of Staff, G-4

DCS, G-8

Deputy Chief of Staff, G-8

DEMIL

demilitarization

DID

data item description

DLA

Defense Logistics Agency

DLR

depot level repair

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

FMECA

failure mode, effects, and criticality analysis

FOC

full operational capability

FRP

full-rate production

FRPDR

full-rate production decision review

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

INSCOM
Intelligence and Security Command

IOC
initial operational capability

IOT&E
Initial Operational Test & Evaluation

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

LIN
line item number

LIW
Logistics Information Warehouse

LOGSA
Logistics Support Activity

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

MDA

milestone decision authority

MDAP

Major Defense Acquisition Program

MDD

materiel development decision

MI

market investigation

MIL-HDBK

military handbook

MISM

major item system map

MISMO

Maintenance Inter-Service Management Office

MS

milestone

NDI

nondevelopmental item

NET

new equipment training

NMWR

national maintenance work requirement

NS-E

nonstandard equipment

O&S

operations and support

OIPT

overarching integrated product team

OSR

operations and support review

Pam

pamphlet

PBA

performance-based arrangement

PBPSS

performance-based product support strategy

PEO

program executive officer

PEO STRI

Program Executive Officer for Simulation, Training, and Instrumentation

PFSA

post-fielding support analysis

POM

program objective memorandum

PPP

public-private partnership

PPSS

post-production software support

PSA

product support 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, maintainability, and cost

RCM

reliability centered maintenance

RFP

request for proposal

RPSTL

repair parts and special tools list

RSSP

Replaced System Sustainment Plan

SALE

Single Army Logistics Enterprise

SBIR

Small Business Innovation Research

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 objective

SOW

statement of work

SQC

sustainment quad chart

SR

sustainment review

T&E

test and evaluation

T/TD

trainer/training developer

TA

TechAmerica

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

TRADOC

U.S. Army Training and Doctrine Command

TSG

The Surgeon General

USACE

U.S. Army Corps of Engineers

USAFMSA

U.S. Army Force Management Support Agency

USAR

U.S. Army Reserve

USC

United States Code

WIPT

working integrated product team

WSR

weapon system review

ZLIN

developmental line item number

Section II**Terms****Acquisition strategy**

A plan that documents the acquisition planning process and provides a comprehensive approach for achieving goals established in materiel requirements. It summarizes other management planning documents (including the LCSP), government-furnished materiel to be provided, the acquisition strategy, organizational resources (money, time, people), and schedule.

Affordability

Program affordability is part of the JCIDS analysis process, which balances cost with performance in establishing key performance parameters. Cost goals are established in terms of thresholds and objectives to provide flexibility for program evolution and to support tradeoff studies.

Analysis of alternatives

The AoA assesses potential materiel solutions to satisfy the capability need documented in the approved ICD. It focuses on identification and analysis of alternatives, 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

The Common Logistics Operating Environment is 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 will not be listed separately in authorization documents; they take on the identity of the BOIP item.

CMIs normally will be 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 PC-based computer model designed to assist in conducting a LORA study. A LORA is an analytical methodology used to determine the maintenance level where the removal and replacement, repair, or the discard of an item should be performed. The Computerized Optimization Model for Predicting and Analyzing Support Structures is the Army approved system level LORA model.

Condition-based maintenance plus

CBM+ is a concept articulated by the Under Secretary of Defense (Logistics) that involves the application of processes that bear on the functionality of CBM. DODI 4151.22, defines CBM+ as the application and integration of appropriate processes, technologies, and knowledge-based capabilities to achieve the target availability, reliability, and O&S costs of DOD materiel across their life cycle. There are six categories of CBM+ data: Status, Actionable, Parametric Engineering, Historical, Usage and Automated Information Technology/Configuration Management. These CBM+ categories are produced by the platform or weapon system and are used at all echelons by Army logistics and maintenance programs of record.

Contractor logistics support

Logistics support of Army materiel performed under contract by commercial organizations (including the original manufacturer) is considered CLS. Support provided may include materiel and facilities, as well as services, in the following areas: supply and distribution; maintenance; training; software support; rebuild or overhaul; modification; materiel support.

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 CLA is an early appraisal of a materiel's depot level maintenance and repair requirements that identifies the core depot logistics requirements for new and modified materiel.

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 acquisition strategy 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 destroying the military offensive or defensive advantages inherent in certain types of materiel. DEMIL includes mutilation, dumping at sea, scrapping, melting, burning, or alteration designed to prevent the further use of this materiel for its originally intended military or lethal purpose and applies equally to materiel in unserviceable or serviceable condition that has been screened through an inventory control point and declared excess or foreign excess.

Demilitarization and disposal plan

The demilitarization and disposal plan documents the requirements for demilitarization and disposal of materiel.

Depot source of repair

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 will use best value analysis to determine the source of repair(s).

Displaced System

A materiel that is redistributed from one ACOM, ASCC, and/or DRU to another because of the fielding of a new or improved materiel.

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.

Facility and infrastructure planning

An early, systematic evaluation of the effect of the introduction of a new materiel on fixed facilities in the peacetime scenario. This is required because of the long and constrained Military Construction, Army process (5 to 7 years from requirements determination to having a usable facility).

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: 1) have received it and 2) 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-313C). 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, acquisition strategy, and manning.

Independent logistics assessment

The ILA is an independent assessment process where the PEO assigns an ILA lead and team members who are not involved in the program under review. The purpose of the ILA is to certify that the PBPSS, LCSP, management, resources, and implementation meet the CAPDEV's requirements.

Initial operational capability

The criteria and schedule for when a program must attain initial operational capability is defined in the program's CDD and CPD. It is the first attainment of the capability (as declared by the IOC organization) by a modified table of organization and equipment unit and supporting elements to operate and maintain a production item of materiel effectively provided that: the materiel has been type classified standard, or approved for limited production; the unit and support personnel have been trained to operate and maintain the materiel in an operational environment; and the unit can be supported in an operational environment in such areas as special tools, test equipment, repair parts, documentation, and training devices. This designation is usually applied at a point in the Defense Acquisition System that is after the full-rate production decision review and implies that the unit is combat ready.

Initial operational test and evaluation

Dedicated operational test and evaluation conducted on production, or production representative articles, to determine whether systems is operationally effective and suitable, and which supports the decision to proceed beyond low rate initial production.

Integrated product support

A unified and iterative approach to the management and technical activities needed to influence operational and materiel requirements and design specifications, define the support requirements best related to materiel design and to each other, develop and acquire the required support, provide required operational phase support at lowest cost, seek readiness and

LCC improvements in the materiel and support systems during the operational life cycle, and repeatedly examine support requirements throughout the service life of the materiel.

Interim contractor support

A method of support used in compressed or accelerated acquisition programs, or when design is not sufficiently stabilized. Provides all or part of a materiel support by contract for a specified interim period after initial deployment to allow organic support capability to be phased in. A support acquisition technique rather than a support concept.

Joint Capabilities Integration and Development System

A Chairman of the Joint Chiefs of Staff process to identify, assess, validate, and prioritize Joint military capability needs. The JCIDS process is a collaborative effort that uses Joint concepts and integrated architectures to identify prioritized capability gaps and integrated doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy solutions (materiel and non-materiel) to resolve those gaps, and provide validated capability requirements to drive the Defense Acquisition System.

Level of repair analysis

An analytical methodology used to assist in developing maintenance concepts and establishing the maintenance level at which components will be replaced, repaired, or discarded based on economic/noneconomic constraints and operational readiness requirements. Also known as repair level analysis.

Life cycle cost

The LCC is the total cost to the government for a materiel over its entire life and is required for all appropriation categories and all materiel. It includes all costs for research and development, investment (production and deployment, to include military construction and site activation), operating and support (organic/contractor personnel, supplies, operations, maintenance, and training) and disposal. This includes direct costs to the materiel and indirect costs that are logically attributable, 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 LCSP documents the MATDEV's plan for formulating, implementing and executing the sustainment strategy for an acquisition program so that the materiel's design as well as the development of the product support package (including any support contracts) are integrated and contribute to the Soldier's mission requirements by achieving and maintaining the sustainment KPP and KSAs.

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 will provide 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

The LPD comprises the support and support-related engineering and logistics data acquired from contractors for use in materiel management processes such as those for initial provisioning, cataloging, and item management. 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

Establishing a maintenance structure for a materiel. Source selection authority (including RCM) and maintenance engineering are used to provide an effective and economical framework for the specific maintenance requirements of the materiel.

Manpower

The personnel strength (military and civilian) as expressed in terms of the number of people available to the Army.

Manpower and Personnel

The identification and acquisition of personnel (military and civilian) with the skills and grades required to operate, maintain, and support materiel over their life time.

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

An all-inclusive term used to describe the total aggregate of equipment being developed, acquired, and managed by a materiel proponent. The materiel includes the logistics support hardware and software being developed and acquired to support the mission-performing equipment.

Materiel availability

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

The command, organization, or agency responsible for accomplishing life cycle management of a materiel solution to include research, development, production, fielding, sustainment, demilitarization, and disposal in response to approved CRDs.

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

The individual responsible for oversight of assigned MATDEVs to ensure they accomplish successful life cycle system management of materiel and software for which the MATDEVs are assigned. The MDA is the approving authority for their assigned portfolio of materiel and software programs.

Nonstandard equipment

Tactical NS-E is commercially acquired or non-developmental equipment that is rapidly acquired and fielded outside of the normal planning, programming, budgeting, and execution and acquisition processes to bridge capability gaps and meet urgent Soldier requirements.

Operational availability

A measure of the degree to which an operationally assigned materiel is either operating or is capable of operating at any time when used in its typical operational and support environment.

Operations and support cost

Life cycle cost of a materiel covering the operation and support required for the materiel over its operational (useful) life.

Organic logistics support

Any logistics support performed by a military department under military control, using government-owned or controlled facilities, tools, test equipment, spares, repair parts, and military or civilian personnel, is considered organic support. Logistics support provided by one military service to another is considered organic within DOD.

Packaging, handling, storage, and transportation

The resources, techniques, and methods required for preserving, transporting, loading and unloading, and storing materiel, their support equipment, basic sustainment materiel (for example, ammunition, batteries, and petroleum, oils, and lubricants), and associated supplies of all classes. Packaging, handling, storage and transportation includes the procedures, environmental considerations, and equipment preservation requirements for both short- and long-term storage.

Personnel

Military and civilian persons of the skill level and grade required to operate and support a materiel, in peacetime and wartime.

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

The management and support activities necessary to ensure continued attainment of readiness and sustainability objectives with economical logistics support after the cessation of the production phase for the acquisition or modernization of a materiel.

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 repair parts and special tools lists, 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

A wide range of related analyses that should be conducted within the systems engineering process. The goals of PSAs are to ensure that supportability is included as a materiel performance requirement and to ensure that the materiel is concurrently developed or acquired with the optimal product support system and infrastructure. Examples of these analyses are repair level analysis, reliability predictions, RCM analysis, FMECA, and LCC analysis.

Product support integrator

The PSI is an entity performing as a formally bound agent (for example, contract, memorandum of agreement, memorandum of understanding) charged with integrating all sources of support, public and private, defined within the scope of the PBAs to achieve the documented outcomes. The PSM, while remaining accountable for materiel performance, effectively delegates responsibility for delivering Soldier outcomes to the PSI.

Product support manager

The PSM is an integral member of a program office, reporting directly to the MATDEV in planning and executing their life cycle management responsibilities.

Product support package

The set of support elements planned for materiel in the operational (deployed) environment provided before and tested and evaluated during technical T&E and user T&E to determine the adequacy of the planned support capability. The product support package is a composite of the support resources that will be evaluated during an LD and tested and validated during

developmental T&E. The product support package includes items such as spare and repair parts, TMs/ IETMs prepared in accordance with current military and approved commercial standards, training package, special tools, TMDE, and unique software.

Product support provider

Provides the necessary product support for the materiel as defined in a PBA.

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

Reliability is the probability that an item will perform a required function under stated conditions for a specified period of time.

Reliability centered maintenance

A disciplined logic or methodology used to identify preventive maintenance tasks to realize the inherent reliability of equipment at a minimum expenditure of resources. RCM is a continuous process that gathers data from operating systems performance and uses this data to improve design and future maintenance. These maintenance strategies, rather than being applied independently, are integrated to take advantage of their respective strengths in order to optimize facility and equipment operability and efficiency while minimizing life cycle costs. RCM involves identifying actions that, when taken, will reduce the probability of failure and which are the most cost effective. It seeks the optimal mix of condition-based actions, interval (time-based or cycle-based) actions, failure finding, or a run-to-failure approach. RCM acknowledges design limitations and the operational environment. Maintenance cannot improve an item's inherent reliability. At best, maintenance can sustain the design level of reliability within the operating context over the life of an item.

Reliability, availability, maintainability, and cost rationale report

The RAM-C rationale report documents development of realistic sustainment KPP and KSA requirements and related supporting rationale. The Office of the Secretary of Defense and the Joint Staff collaborated on the RAM-C Report Manual to assist CAPDEVs, MATDEVs, and engineers to design RAM into materiel early in a program. The manual supports life cycle implementation of the sustainment metric. The Sustainment metric consists of an availability KPP and two supporting KSAs: Reliability and Ownership Cost. Programs under development are expected to create a balance between RAM performance in the field and the related costs of providing that performance.

Replaced System Sustainment Plan

The RSSP documents how the legacy materiel being replaced by new development materiel will be sustained until the legacy materiel has been replaced by the new materiel, or is no longer relevant to supporting the mission for which it was acquired.

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

Standardization: The process of developing concepts, doctrines, procedures, and designs to achieve and maintain the most effective levels of compatibility, interoperability, interchangeability, and commonality in the fields of operations, administration, and materiel. Interoperability: The ability of materiel, units, or forces to provide services to, and accept services from, other materiel, units, or forces and to use the services so exchanged to enable them to operate effectively together.

Supply support

Management actions, procedures, and techniques required to determine, acquire, catalog, receive, store, transfer, issue, and dispose of principal and secondary items. Includes provisioning for initial support as well as for replenishment supply support.

Support equipment

All ancillary and associated equipment (mobile or fixed) required to operate and support a materiel, including ASIOE and component items such as trucks, air conditioners, generators, ground-handling and maintenance equipment, tools, metrology, calibration and communications equipment, test equipment, and automatic test equipment with diagnostic software for both on- and off-equipment maintenance. Incorporates the planning and acquisition of support necessary for the operation and sustainment of the support and test equipment itself. Also includes additional support equipment required due to the aggregation of the new materiel into high organizational-level densities, such as additional line haul fuel trucks or ammunition carriers.

Supportability

That characteristic of a support system design that provides for sustained materiel performance at a required readiness level.

Surrogate data

Data used from a comparable legacy materiel to perform estimates to establish initial baselines for a new design where data is not yet available for the new design.

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

Measures relating to the effectiveness of an operational unit to meet peacetime deployability and wartime mission requirements. Considers the unit set of equipages and the potential logistics support assets and resources available to influence the materiel operational readiness and sustainability. Peacetime and wartime system readiness objectives will differ due to usage rate, operational modes, mission profiles, and operational environments. Examples of materiel readiness objectives include operational availability at peacetime usage rates, operational availability at wartime usage rates, sortie generations per given timeframe (aircraft), and maximum administrative and logistics downtime (intermittent missions). Materiel readiness objectives relate quantitatively to materiel design parameters and to materiel support resource requirements.

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 integrated product support, supportability planning, and other acquisition and program management documentation. The program management planning process for modern government acquisition programs requires in-depth knowledge of many functional specialties. Resource shortages and lack of expertise and training contribute to inadequate planning and inappropriate specification of requirements. 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 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

Technical Data represents recorded information of scientific or technical nature, regardless of form or character (such as, equipment technical manuals and engineering drawings), engineering data, specifications, standards and data item descriptions. Use of any source controlled data as part of this element are included in technical data as are "as maintained" bills of material and materiel configuration identified by individual configuration items. Technical data does not include computer software or financial, administrative, cost or pricing, or management data or other information incidental to contract administration." See 10 USC 2302(4).

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 aid

Generic term referring to any item developed, procured, or fabricated for the purpose of assisting in the conduct of training and process of learning (for example, models, displays, slides, books, and pictures).

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, new equipment training, 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 and predictable conditions-based transition of responsibility to execute sustainment from the MATDEV to AMC, including operation and maintenance funding for equipment hardware and software life cycle sustainment. The time period is bounded by initiating transition to sustainment at the full-rate production decision and is complete no later than IOC plus 3 years. Transition to sustainment will be executed in a manner that is consistent with DODD 5000.01 that the MATDEV will be the single point of accountability for accomplishing program objectives for total life cycle systems management, including sustainment.

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.

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