NASA Policy Directive

NPD 7500.1D
Effective Date: March 02, 2015
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COMPLIANCE IS MANDATORY FOR NASA EMPLOYEES

Printable Format (PDF)

Subject: Program and Project Life-Cycle Logistics Support Policy (Revalidated with Change w/Change 1, on May 25, 2022)

Responsible Office: Office of Strategic Infrastructure

CHANGE HISTORY

Chg#	Date	Description/Comments
1	05/25/2022	Updated with administrative changes made to P4.Applicable Documents and Forms, 5. Responsibility and Attachment C. References. Also includes edits to comply with NPR 1400.1 Revision H.

1. POLICY

a. It is NASA's policy for:

(1) Agency-funded programs and projects that develop or procure reusable or maintainable flight hardware or programmatic/mission-specific ground hardware to define and implement measures that provide life-cycle logistics support through applicable phases to increase the probability of mission success and to control and reduce life-cycle costs and risks. Resources applied to life-cycle logistics support may be scaled to fit the scope and needs of the individual program or project.

(2) Programs and projects to include supportability as part of the system's design characteristics to assist in ensuring system availability and affordability.

(3) Programs and projects to define and implement measures to identify and mitigate product availability risks arising from obsolescence, regulatory prohibitions, supplier loss, procurement lead times, or other supply disruptions through applicable life-cycle phases.

2. APPLICABILITY

a. This NPD is applicable to NASA Headquarters, NASA Centers, including Component Facilities, and Technical and Service Support Centers.

b. This language applies to Jet Propulsion Laboratory, a Federally Funded Research and Development Center, other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements.

c. This policy includes major modifications of systems already in full production or operational as of the effective date of this directive.

d. This policy includes Government-Furnished Property, Government- developed systems and hardware, and programmatic/mission-specific facilities.

e. Hardware leased by NASA or loaned to NASA by other Federal agencies and technology development or demonstration programs that do not provide mission, flight, or systems hardware is exempt from the requirements of this NPD.

f. In this directive, all document citations are assumed to be the latest version unless otherwise noted.

g. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended but not required, "will" denotes expected outcome, and "are/is" denotes descriptive material.

h. Documents cited as authority, applicable, or reference documents may be cited as a different categorization, which characterizes its function in relation to the specific context.

3. AUTHORITY

a. The National Aeronautics and Space Act, as amended 51 U.S.C. § 20111 et seq.

b. NPD 1000.0, NASA Governance and Strategic Management Handbook.

4. APPLICABLE DOCUMENTS AND FORMS

a. NPR 7120.5, NASA Space Flight Program and Project Management Requirements.

b. NPR 8735.1, Exchange of Problem Data Using NASA Advisories and the Government-Industry Data Exchange Program (GIDEP).

c. AIA/ASD S3000L, International Procedure Specification for Logistics Support Analysis. (available at https://www.s3000l.org/downloads.htm).

d. SAE TA-STD-0017, Product Support Analysis (available at https://standards.nasa.gov).

e. SAE GEIA-STD-0007-B, Logistics Product Data (available at https://standards.nasa.gov).

5. RESPONSIBILITY

a. The Assistant Administrator, Office of Strategic Infrastructure (OSI) shall establish program and project life-cycle logistics support policies and guidance, provide functional leadership in life-cycle logistics support, and provide oversight and review of life-cycle logistics support policy implementation and effectiveness.

b. Associate Administrators shall ensure compliance with NASA program and project life-cycle logistics support policies within their respective organizations and provide specific policies and standards, as required.

c. Center Directors shall ensure that the programs and projects for which they are responsible (including Government-Furnished Property and Government-developed hardware and systems) comply with the life-cycle logistics support policies detailed herein. Also, they are accountable for managing and controlling NASA property, supplies, equipment, and transportation services acquired or utilized by their programs and projects.

d. Program Managers and Project Managers shall:

(1) Ensure compliance with life-cycle logistics support policies.

(2) Determine the nature and scope of life-cycle logistics support necessary for the program/project to minimize life-cycle cost while achieving required operational effectiveness.

(3) Ensure that Integrated Logistics Support (ILS) elements are addressed for applicable life-cycle phases from program/project conception through final disposition.

(4) Ensure that life-cycle logistics support is addressed as a component of the acquisition strategy and budgeting process.

(5) Manage the initial provisioning of an adequate range and depth of spare parts required to support their assigned system and assure adequate spares replenishment throughout the system's life cycle.

(6) Manage the acquisition of adequate quantities of consumable items to support their assigned system throughout the system's life cycle.

(7) Determine the most appropriate allocation of responsibilities between the Government and contractor for performing life-cycle logistics support functions.

(8) Perform periodic reviews to monitor compliance with NASA's Life-Cycle Logistics Support Policy when the responsibilities defined in section 5.e. are fulfilled by a designated Life-Cycle Logistics Support Manager.

(9) Designate a program or project Life-Cycle Logistics Support Manager at the beginning of the mission needs and conceptual studies phase, if required.

(10) Maintain programmatic oversight of industrial base and supply chain issues that might pose a risk to the program or project.

(11) Develop and implement processes, appropriate contract language, and mechanisms needed to identify, mitigate, monitor, and report industrial base and supply chain risks to the program or project. This may include (but is not limited to) risks such as counterfeit parts, obsolescence, regulatory prohibitions, procurement lead times, supplier loss, or other supply chain disruptions.

e. Program Managers and Project Managers or their designated Life-Cycle Logistics Support Managers shall:

(1) Integrate life-cycle logistics support considerations beginning with program/project conception, including:

(a) Participation in the design process beginning at program/project conception to ensure that systems are supportable.

(b) Logistics infrastructure and information systems management.

(c) Flight and ground systems hardware maintenance.

(d) Supply support, including spares procurement and replenishment, resupply and return, and supply chain management related to logistics support functions.

(e) Technical data and documentation (including procedures and work instructions).

(f) Maintenance tools and test and support equipment.

(g) Packaging, storage, material transportation, and handling.

(h) Maintenance training.

(i) Postproduction support.

(j) Disposition at end of life.

(k) Logistics support performance measurements for the life of the program or project.

(l) Software maintenance.

(4) Identify procurement strategies to obtain optimum quantities of spare parts based on predicted usage, need, initial cost, life-cycle cost, and program maintenance philosophy.

(5) Support program and project management and work with other relevant NASA organizations to develop and implement processes, appropriate contract language, and mechanisms needed to identify, mitigate, monitor, and report industrial base and supply chain risks to the program or project. This may include (but is not limited to) risks such as counterfeit parts, obsolescence, regulatory prohibitions, procurement lead times, supplier loss, or other supply chain disruptions.

(6) Participate in the Government-Industry Data Exchange Program (GIDEP), which includes baselining parts lists to check for historical and future GIDEP notices and NASA Advisories and significant DMSMS information, according to NPR 8735.1, Exchange of Problem Data Using NASA Advisories and the Government-Industry Data Exchange Program (GIDEP).

6. DELEGATION OF AUTHORITY

None.

7. MEASUREMENT/VERIFICATION

a. Program/Project Managers establish performance-based metrics based on the scope and complexity of the specific program or project to determine if systems and processes are in place within applicable programs and projects to address the ILS elements shown in section 5.e.(3) and to assess life-cycle costs and system operational availability.

b. At a minimum, program and project plans, requirement documents, and resources budgeted or applied to operations and maintenance support will be examined through formal reviews (e.g., program and project milestone reviews and Standing Review Board Reviews, as defined in NPR 7120.5) and informal reviews.

c. Metrics will be reviewed at least once every 5 years to ensure continued applicability.

8. CANCELLATION

a. NPD 7500.1C, Program and Project Logistics Policy, dated August 17, 2012.

b. NID 7500.1, Program and Project Life Cycle Logistics Support Policy dated November 5, 2013.

/s/ Charlie F. Bolden
Acting Administrator

ATTACHMENT A: (TEXT)

Consumable Items - Materials that are used and consumed during assembly, integration, test, operation, and maintenance of a system. Examples include, but are not limited to, wipes, tie wraps, fluids, safety wire, adhesives, and lubricants.

Industrial Base - The capabilities residing in either the commercial or Government sector required to design, develop, manufacture, launch, and service the program or project. This encompasses related manufacturing facilities, supply chain operations and management, a skilled workforce, launch infrastructure, research and development, and support services.

Integrated Logistics Support (ILS)(adapted from DoD Acquisition Community Connection) - A discipline associated with the design, development, test, production, fielding, sustainment, improvement modifications, and disposal of cost-effective systems. The principal objectives of ILS are to ensure that support considerations are an integral part of a system's design requirements, that the system can be cost effectively supported through its life cycle, and that the infrastructure elements necessary to the initial fielding and operational support of the system are identified, developed, and acquired. Since the majority of a system's life-cycle costs can be attributed directly to operations and support costs, it is vitally important that system developers evaluate the potential operation and support costs of alternate designs and factor these into early design decisions. ILS activities are most effective when they are integral to both the contractor and Government's system engineering technical and management processes. The recognized elements of ILS include:

a. Design Interface (participating in the design process to enhance system supportability).

b. Supply Support.

c. Maintenance Planning.

d. Packaging, Handling, Storage, and Transportation (PHS&T).

e. Technical Data.

f. Support and Test Equipment.

g. Training and Training Support.

h. Manpower and Personnel for ILS Functions.

i. Facilities Required for ILS Functions.

j. Computer Resources Support.

Logistics - As used within NASA, this term encompasses the functions associated with planning for and implementation of program life-cycle logistics support (i.e., Integrated Logistics Support), transportation, supply support, supply chain management related to logistics support functions, property management, and property disposition.

Maintainable Flight Hardware - Flight hardware that is designed to be repaired and restored throughout its life cycle to nominal operating condition following failure or degraded operation. It includes both hardware that is integral to the systems of a launch vehicle, spacecraft, or other in-space system and loose equipment.

Programmatic/Mission-Specific Ground Hardware - Non-flight hardware that performs a function specifically

associated with a flight program. Examples include launch facilities, ground support equipment (GSE) used in support of flight hardware, and special test equipment used in support of flight hardware.

Reusable Flight Hardware - Flight hardware that is designed to be used on multiple flights or missions. It includes both hardware that is integral to the systems of a reusable launch vehicle, spacecraft, or other in- space system and loose equipment.

Supply Chain - The specific group of suppliers and their interrelationships that are necessary to design, develop, manufacture, launch, and service a program or project. This encompasses all levels within a space system (including associated GSE) and also includes providers of raw materials, components, subsystems, systems, and services and systems integrators.

Supply Chain Management - A synergistic function performed by program management, safety and mission assurance, logistics, engineering, and other related functions that ensures systematic and strategic coordination of supply and demand management of product and service across all business functions, including NASA Centers, suppliers, third- party enterprises, and other partners.

Supply Support - An element of ILS that consists of all actions, procedures, and techniques necessary for acquisition management, cataloging, receiving, storing, transferring, issuing and disposing of spares, repair parts, and supplies. The process includes provisioning for initial support, as well as acquiring, distributing, and replenishing inventories.

Supportability - The degree to which system design characteristics and planned logistics resources meet system requirements throughout the system's service life at an affordable cost.

ATTACHMENT B: Acronyms

AIA-Aerospace Industries Association

ASD-AeroSpace and Defense Industries Association of Europe

CDR-Critical Design Review

DMSMS-Diminishing Manufacturing Sources and Material Shortages

GEIA-Government Electronics Industry Association

GSE-Ground Support Equipment

GIDEP-Government-Industry Data Exchange Program

ILS-Integrated Logistics Support

ILSP-Integrated Logistics Support Plan

JPL-Jet Propulsion Laboratory

LSA-Logistics Support Analysis

NASA-National Aeronautics and Space Administration

NPD-NASA Policy Directive

NPR-NASA Procedural Requirement

PDR-Preliminary Design Review

SDR-System Definition Review

SRR-System Requirements Review

STD-Standard

ATTACHMENT C: References

C.1 NPD 4100.1, Supply Support and Material Management Policy. .

C.2 NPD 4200.1, Equipment Management Program.

C.3 NPR 4200.1, NASA Equipment Management Procedural Requirements.

C.4 NPR 4300.1, NASA Personal Property Disposal Procedural Requirements.

C.5 NPR 4310.1, Artifact Identification and Disposition.

C.6 NPD 4500.1, Administration of Property in the Custody of Contractors.

C.7 SAE GEIA-HB-0007-B, Logistic Product Data Handbook. (available at https://standards.nasa.gov).

C.8 SAE GEIA-STD-927, Common Data Schema for Complex Systems (available at https://standards.nasa.gov).

C.9 SAE GEIA-HB-927, Handbook and Guide for SAE GEIA-927 Common Data Schema for Complex Systems (available at https://standards.nasa.gov).

C.10 SD-22, Diminishing Manufacturing Sources and Material Shortages-A Guidebook of Best Practices and Tools for Implementing a Robust DMSMS Management Program, August 2012 (available at http://www.dau.mil/publications/pages/guidebooks.aspx)

C.11 Department of Defense, Designing and Assessing Supportability in DoD Weapon Systems: A Guide to Increased Reliability and Reduced Logistics Footprint, October 2003 (available at http://www.dau.mil/publications/pages/guidebooks.aspx)

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