

TECHNICAL REPORT

GEIA-HB-0007

REV. B

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(R) Logistics Product Data Handbook

RATIONALE

The handbook provides information that assists the user of GEIA-STD-0007 in understanding the analysis process that result in logistics product data; the identification of logistics product data required to produce logistics reports; and how to contract for GEIA-STD-0007. The handbook has been revised based on changes to GEIA-STD-0007-B. The changes include new Entities and Attributes to capture reliability analyses results, scheduled maintenance events, maintenance objective states, transportability information and digital files. These additions affect the guidance, figures and tables contained in the handbook.

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1. CHAPTER 1, LOGISTICS PRODUCT DATA INTRODUCTION

1.0 Introduction

This handbook is intended to provide additional information on the use and tailoring of the data in GEIA-STD-0007. The standard provides a new approach to Logistics Support Analysis Record (LSAR) (i.e., MIL-STD-1388-2B) data with emphasis on data transfer (e.g., XML Schemas) versus data storage (e.g., relational tables). GEIA-STD-0007 identifies the range of logistics product data that is generated during the development and acquisition of a system or end item. It does not prescribe the supportability analyses required to generate logistics product data. That is contained in TA-STD-0017, Product Support Analysis. How the data is generated via analysis techniques/tools, how it is stored and processed, and how the data is used to generate specific logistics support products, is left to the performing activity. GEIA-STD-0007 is a data transfer standard implementing the logistics data concepts of GEIA-STD-927, Common Data Schema for Complex Systems.

GEIA-STD-0007 provides a comprehensive list of data elements that can be generated as a result of the supportability analysis conducted during the design, development, and initial fielding of a system or end item. It captures information related to logistics design requirements, reliability and maintainability, system safety, maintenance engineering, support and test equipment, training and training devices, manpower and skills, facilities, transportation, supply support, and parts packaging. The volume of data generated is driven by the engineering level of effort that will be expended in each of the previously mentioned areas (e.g., if existing facilities are used then no facilities data would be generated under GEIA-STD-0007). This volume of data is also tempered by the hardware level of indenture to which the engineering analysis is required to be performed (e.g., contract maintenance to the engine level). The most important aspect of the data in GEIA-STD-0007 is that it is used to generate the logistics support products (e.g., operator and maintainer manuals, supply support lists, training programs for operators/maintainers, etc.) required to sustain a system or end item.

1.1 Intended Use

This guide provides information on the analysis processes that generate logistics product data from the Department of Defense life cycle framework perspective, from the analysis activities defined in TA-STD-0017 and from international standards perspective using STEP 10303, AP239, Product Life Cycle Support. This information is contained in [Chapter 2](#) of this guide. [Chapter 3](#) provides additional information on each of the entities contained in the standard. It focuses on hardware indenture level relationship to the entity data; when entity data is required; the entity data source (i.e., requiring authority/customer or performing activity); functional responsibility/interface requirements; and the primary uses for the entity data. [Chapter 4](#) provides guidance on contracting for GEIA-STD-0007. This chapter provides matrices that can be used to tailor the logistics product data requirements based on logistics product needs. These matrices relate logistics products that can be generated using existing Logistics Support Analysis Record software and are further defined in TA-HB-0007-1. [Appendix A](#) contains the attribute selection sheet with all the elements and the attributes listed. [Appendix B](#) provides guidance on the assignment of the major key fields used in the XML schema. These keys relate to the engineering functional and physical breakdown of the system. These major fields are the Logistics Support Analysis Control Number (LCN), Alternate LCN (ALC), LCN Type (i.e., functional or physical) and the Usable on Code (UOC). The guidance in this appendix also addresses the relationship of these key fields to the Work Breakdown Structure (MIL-HDBK-881A) coding of a system.

[Appendix C](#) provides a cross reference matrix of the data elements in GEIA-STD-0007, MIL-STD-1388-2B, MIL-PRF-49506, and DEF STAN 0060, along with data field lengths and formats. To a large extent, GEIA-STD-0007 is based upon the data in the cancelled MIL-STD-1388-2B and, to a lesser extent, on the information in DEF STAN 0060. [Appendix D](#) provides specific guidance on contracting for GEIA-STD-0007 for U.S. Navy programs. The appendix addresses the data elements required to produce a Navy Maintenance Plan, Provisioning Parts List, and Packaging Data.

The contracting aspects of this handbook make use of the Department of Defense data item descriptions DI-SESS-81758, Logistics Product Data, and DI-SESS-81759, Logistics Product Data Summaries, developed specifically for GEIA-STD-0007. MIL-STD-1388-2B was published in March 1991 and cancelled as a DOD standard in November 1996. It contained LSAR Data and 48 LSAR Reports. MIL-STD-1388-2B provided information pertaining to technical characteristics of a system or equipment and provided data directly related to the supportability of that system or equipment. MIL-STD-1388-2B provided guidance for fulfilling the requirements of a relational database system. The interrelationships and data hierarchy among tables was established through common data element keys and data values. This provided the capability to produce any of the LSA reports, other data files, and ad hoc reports via any query capability. DEF-STAN-0060, Integrated Logistics Support, was published in 1996 by the United Kingdom Ministry of Defense (UK MOD) and contains data in MIL-STD-1388-2B along with the UK MOD and other international standards data (e.g., S1000D, International Specification for Technical Publications Using a Common Source Database). Historically these standards have been the source of documents used for the application of LSA and LSAR in relation to the procurement of materiel. Subsequent to the cancellation of MIL-STD-1388-2B, the Department of Defense undertook publication of MIL-PRF-49506, Logistics Management Information (published November 1996). The performance specification contains a subset of LSAR data and provides a means of acquiring logistics data but does not define data transfer formats or report formats. GEIA-STD-0007 has replaced the performance specification with a robust set of logistics data requirements.

1.2 Performance Based Logistics (PBL) and the GEIA-STD-0007

PBL is the purchase of support as an integrated, affordable, performance package designed to optimize system readiness and meet performance goals for a weapon system through long-term support arrangements with clear lines of authority and responsibility. Application of PBL may be at the system, subsystem, or major assembly level, depending on program-unique circumstances and appropriate product support strategy analysis.

The US DOD recommends buying and utilizing performance based outcomes as a part of the Total Life Cycle Systems Management (TLCSM) of a weapons system only if it is economically and operationally feasible (justified by a Business Case Analysis). The GEIA-STD-0007 can provide support in the transfer of data for the following metrics related to the DODs TLCSM and Key Performance Parameters (KPP):

- **Availability KPP** Availability will consist of two components: Materiel Availability and Operational Availability. The components provide availability percentages from a corporate, fleet-wide perspective and an operational unit level, respectively. The Operational Availability metric is an integral step to determining the fleet readiness metric expressed by Materiel Availability. The following provides guidance for development of both metrics:
 - *Materiel Availability* Materiel Availability is a measure of the percentage of the total inventory of a system operationally capable (ready for tasking) of performing an assigned mission at a given time, based on materiel condition. This can be expressed mathematically as number of operational end items/total population. The Materiel Availability addresses the total population of end items planned for operational use, including those temporarily in a non-operational status once placed into service (such as for depot-level maintenance). The total life-cycle timeframe, from placement into operational service through the planned end of service life, must be included. This is often referred to as equipment readiness. GEIA-STD-0007 can provide input to this KPP via the calculation of Operational Availability.
 - *Operational Availability* Operational Availability indicates the percentage of time that a system or group of systems within a unit are operationally capable of performing an assigned mission and can be expressed as (uptime/(uptime + downtime)). GEIA-STD-0007 supports this metric with contractually required and design calculated operational availability values that are contained in Entities AB and BE, respectively. Figures 6, 7, and 8 of this handbook provide the reliability and maintainability values in GEIA-STD-0007 that calculate operational availability.
- **Reliability** Reliability is a measure of the probability that the system will perform without failure over a specific interval. Reliability must be sufficient to support the warfighting capability needed. Considerations of reliability must support both Availability metrics. Specific criteria for defining operating hours and failure criteria must be provided together with the Reliability. GEIA-STD-0007 captures contractually required and design calculated mean time between system aborts in Entities AG and BD, respectively. This parameter, along with the reliability parameters identified in Figure 6 of this handbook, provides a basis for establishing the Mission Reliability metric.

- **Ownership Cost** Ownership Cost provides balance to the sustainment solution by ensuring that the operations and support (O&S) costs associated with Availability are considered in making decisions. As a minimum, the following cost elements are required: Unit Operations (only Energy); Maintenance; Sustaining Support (All except System Specific Training); and Continuing System Improvements. While not directly defined as a single element in GEIA-STD-0007, the metric Ownership Cost can be calculated from the reliability, maintenance and supply elements contained in Entities B, C, E, F, G, J and H of GEIA-STD-0007. This information would define the ownership cost for a single item, which can then be extrapolated to the fleet.

Program offices can define additional KPP's for individual development programs. Previously defined KPPs are provided below for consideration.

- **TLCSM Cost per Unit Usage** The total operating and life cycle costs divided by the appropriate unit of measurement for a given weapon system. Depending on the weapon system, the measurement unit could be flight hour, steaming hour, launch, mile driven, etc. While not directly defined as a single element in GEIA-STD-0007, the metric TLCSM Cost per Unit Usage can be calculated from the reliability, maintenance and supply elements contained in Entities B, C, E, F, G, J, and H of GEIA-STD-0007.
- **Cost per Unit Usage** The variable operating costs divided by the appropriate unit of measurement for a given weapon system. Depending on the weapon system, the measurement unit could be flight hour, steaming hour, launch, mile driven, etc. While not directly defined as a single element in GEIA-STD-0007, the metric Cost per Unit Usage can be calculated from the reliability, maintenance and supply elements contained in Entities B, C, E, F, G, J and H of GEIA-STD-0007.
- **Logistics Footprint** The government/contractor size or "presence" of logistics support required to deploy, sustain, and move a weapon system. Measurable elements include inventory/equipment, personnel, facilities, transportation assets, and real estate. GEIA-STD-0007 captures the total maintenance (C Entities), manpower (Entities C and G), supply (H Entities), support equipment (E Entities), facilities (F Entities) and transportation requirements (J Entities) needed to sustain and move a system. This information would be used to establish the Logistics Footprint metric.
- **Logistics Response Time** This is the period of time from logistics demand signal sent to satisfaction of that logistics demand. "Logistics Demand" refers to systems, components, or resources, including labor, required for weapon system logistics support. GEIA-STD-0007 captures this metric in the form of the element "repair cycle time" documented by level of maintenance in Entity HG. The information in GEIA-STD-0007 can be used to calculate this metric at the system, subsystem or major assembly level depending on the PBL strategy.

For more information on the subject of PBL, see the Defense Acquisition Guide.

1.3 Referenced Documents

MIL-STD-1388-2B	Logistics Support Analysis Record
MIL-HDBK-881A	Work Breakdown Structures for Defense Materiel Items
MIL-PRF-49506	Logistics Management Information
MIL-HDBK-502	Acquisition Logistics
GEIA-STD-927	Common Data Schema for Complex Systems
GEIA-STD-0007	Logistics Product Data
TA-STD-0017	Product Support Analysis
DEF STAN 00-60	Integrated Logistics Support
STEP 10303	Standard for Exchange of Product Model Data

ATA iSPEC 2200	Information Standards for Aviation Maintenance
S1000D	International Specification for Technical Publications Using a Common Source Database
TechAmerica HB-0007-1	Logistics Product Data Reports
No Number	Defense Acquisition Guidebook

2. CHAPTER 2, LOGISTICS PRODUCT DATA IN THE DEVELOPMENT LIFE CYCLE PROCESS

2.0 Introduction

This chapter addresses the analysis processes that generate logistics product data during each phase of an equipment's life cycle. The information is presented from the standpoint of the DOD Life Cycle Management Framework, from the TA-STD-0017 analysis activities model and the STEP 10303 AP239, Product Life Cycle Support (PLCS) Activity Model. Details of the DOD Life Cycle Management Framework model may be found in the Defense Acquisition Guidebook. The AP239, PLCS Activity Model is an industry model that does not follow the formal DOD life cycle phases. However, its major activities can be linked to the DOD life cycle phases, which has been done in this chapter. Where subtask or sub-subtask activities in AP239 generate logistics product data, these activities have been shown as indented tasks to the major activities of AP239. Additionally, some analyses/activities are repeated in later life cycle phases. This is an indication that the analysis is being performed to a greater level of detail based on hardware indenture or levels of maintenance.

Development and sustainment of systems in the Department of Defense Acquisition Guidebook is defined by six life cycle phases:

- Materiel Solution Analysis,
- Technology Development,
- Engineering and Manufacturing Development,
- Production and Deployment,
- Operations and Support, and
- Disposal/Demilitarization Operations

The STEP 10303 AP239 model defines four major activities that occur over the life of a system under the major activity of Provide Through Life Support for Product:

- Manage Information to Support a Product,
- Generate Support Solution,
- Commission Support Solution, and
- Provide Support

The activities and tasks contained in AP239 Generate Support Solution approximately equate to the activities and tasks accomplished in Materiel Solution Analysis, Technology Development and Engineering and Manufacturing Development Phases of the DOD life cycle. The AP239 Commission Support System activities and tasks are similar to those accomplished during the Production and Development Phase and the AP239 Provide Support equates to the Operations and Support Phase and Disposal/Demilitarization Phases of the DOD Life Cycle. These relationships are detailed in the following sections as they apply to the generation of logistics and logistics related data.

2.1 Life Cycle Phase: Materiel Solution Analysis/Generate Support Solution

2.1.1 DOD Life Cycle Framework and TA-STD-0017 Analyses

- Perform use study (Activity 4)
- Perform comparative analysis (Activity 6)
- Identify support system standardization opportunities (Activity 5)
- Identify technological opportunities (Activity 7)
- Define supportability factors (Activity 8)
- Conduct initial functional requirements analysis (Activity 9)

2.1.2 AP239 Activity Model Analyses

- Define Support Context
 - Define life and usage profile
 - Define available support resources
- Establish requirements for support solution
 - Elicit support stakeholder needs
 - Analyze previous experience
 - Define support solution requirements
 - Define support characteristics
 - Define support metrics
 - Define support solution requirements

[Figure 1](#) provides a pictorial view of the activities/tasks and desired outcomes that occur during the Materiel Solution Analysis Phase/Generate Support Solution activities. Approved hardware alternatives lead to support alternatives and the identification of supportability requirements for each hardware alternative. With the identification of a single hardware solution, operational and supportability requirements are documented in the Initial Capability Document (ICD) and the follow-on Capability Development Document (CDD), which are used to develop the supportability specifications that are placed in development contracts.

2.1.3 Logistics Product Data Generated (by Entity)

- XA - End Item Acronym
- XB - Logistics Support Analysis Control Number Indentured Item
- XC - System/End Item identification
- "A" Entities for identification of operations and maintenance requirements
- "F" Entities for identification of new or modified facilities, as required

Matériel Solution Analysis Phase

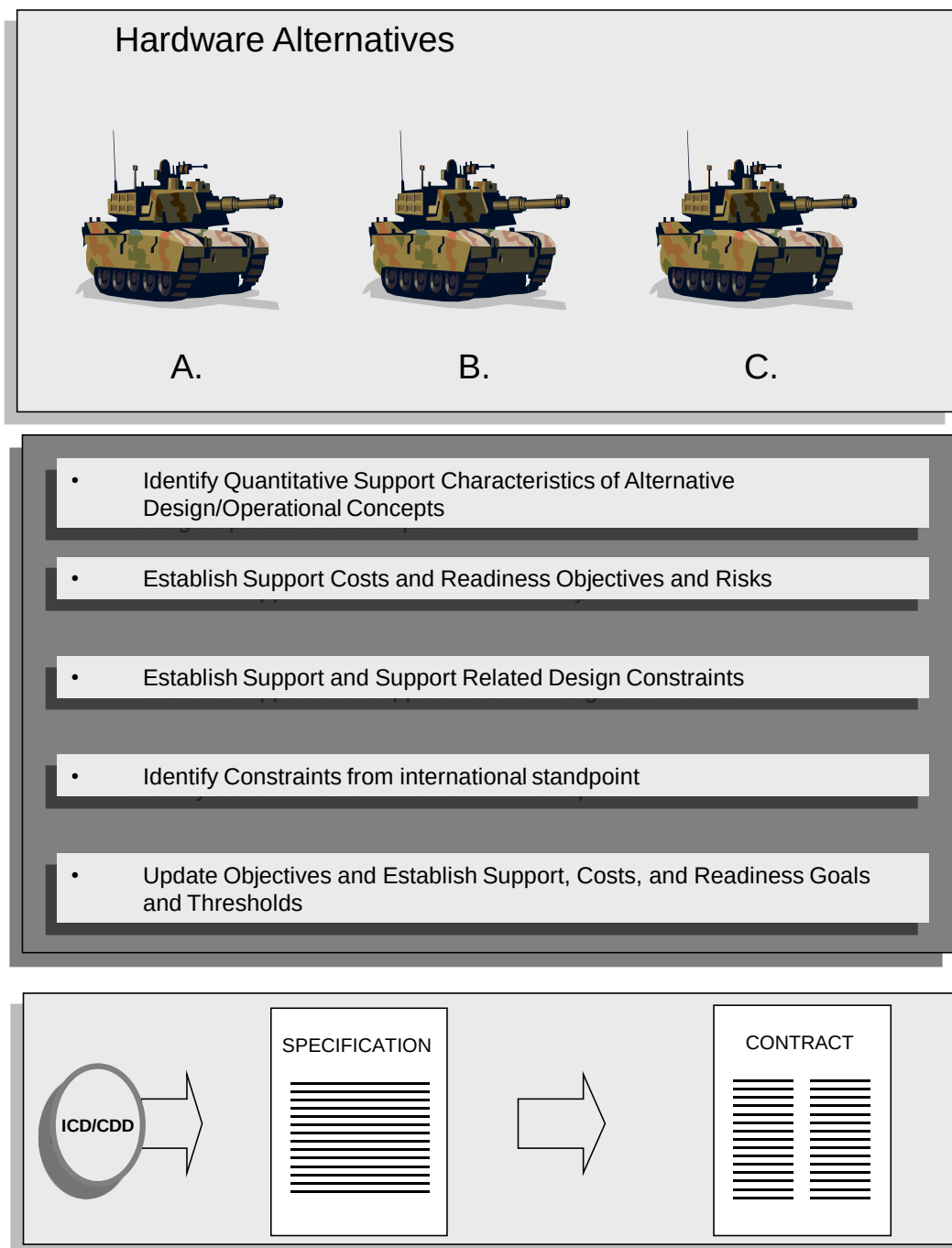


FIGURE 1 - MATERIEL SOLUTION ANALYSIS PHASE

2.2 Life Cycle Phase: Technology Development Phase/Generate Support Solution

2.2.1 DOD Life Cycle Framework and TA-STD-0017 Analyses

- Update comparative analysis (Activity 6)
- Define Functional Requirements (Activity 9)
- Conduct support System Tradeoff Analysis (Activities 10 and 11)
 - Initiate level of repair tradeoffs (Activity 11.7)
 - Initiate cost analyses (Activity 11.1)
- Conduct sensitivity Analysis (Activity 11.4)
- Identify support system standardization requirements (Activity 5)
- Initiate task analysis (Activity 12)

2.2.2 AP239 Activity Model Analyses

- Design support solution
 - Establish support drivers
 - Perform task analysis
 - Identify potential tasks
 - Predict support performance and resource use

[Figure 2](#) provides a pictorial view of the activities/tasks and desired outcomes that occur during the Technology Development Phase/Generate Support Solution Activity. Upon approval of the Technology Development Strategy and selection of an initial concept, the project enters the Technology Development phase. The purpose of this phase is to reduce technology risk and determine the appropriate set of technologies to be integrated into a full system. Similarly, alternative support solutions are analyzed and refined to establish the best support solution for the technology identified.

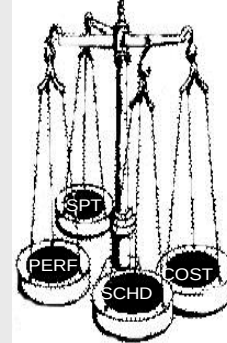
2.2.3 Logistics Product Data Generated (by Entity)

- “X” Entities to the indenture level commensurate with the analysis
 - BA - Reliability, Availability, and Maintainability Characteristics
 - BD - Reliability, Availability, and Maintainability Indicator Characteristics
 - BE - War/Peace Reliability, Availability, and Maintainability Indicator Characteristics
 - CA - Task Requirement
 - CB - Subtask Requirement
- “F” Entities for identification of new or modified facilities, as required

TECHNOLOGY DEVELOPMENT PHASE

Tradeoff Logic

- Identify Evaluation and Tradeoff Criteria
- Select/Construct Analytical Relationships or Models
- Conduct the Tradeoff/Evaluation and Identify Best Alternative(s)
- Conduct Sensitivity Analysis on High Risk Variables
- Document Tradeoff Results (Include Risks and Assumptions)
- Update Evaluations and Tradeoffs
- Include Both Peacetime and Wartime Considerations in analysis
- Assess Impact of tradeoff Decision on Existing/Planned Weapon, Supply Maintenance, and Transportation Systems
- Assess Life Cycle Support Considerations (Include Post Production Support)



TYPE OF TRADEOFFS

- Conduct Support Systems Tradeoff
- Conduct System Tradeoffs
- Continue to Iterate Support system and System Tradeoffs as Additional Data is Made Available or Refined
- Conduct Other Key Tradeoffs and Evaluations as appropriate to Specified Life Cycle Phase

SUPPORT
SYSTEM ASUPPORT
SYSTEM BSUPPORT
SYSTEM CDESIGN
ALT
A/B/COPERATION
ALT
A/B/CSUPPORT
ALT
A/B/CSYSTEM READINESS
SENSITIVESMANPOWER AND
PERSONNEL TRADEOFFSTRAINING
TRADEOFFSREPAIR LEVEL
ANALYSISCOMPARATIVE
EVALUATIONSSUPPORT FACILITY
TRADEOFFSDIAGNOSTIC
TRADEOFFSSURVIVABILITY
TRADEOFFSENERGY
TRADEOFFSENVIRONMENTAL
TRADEOFFSTRANSPORTABILITY
TRADEOFFS

FIGURE 2 - TECHNOLOGY DEVELOPMENT PHASE

2.3 Life Cycle Phase: Engineering and Manufacturing Development/Generate Support Solution

2.3.1 DOD Life Cycle Framework and TA-STD-0017 Analyses

Update Functional Requirements (Activity 9)
Perform Failure Modes Effects and Criticality Analysis (Activity 9.5)
Perform Failure Tree Analysis (Activity 9.6)
Perform Reliability Centered Maintenance Analysis (Activity 9.7)
Update and refine Task Analysis (Activity 12)
Perform Level of Repair Analysis (Activity 11.7)
Conduct Supportability Test, Evaluation, and Verification (Activity 17)

2.3.2 AP239 Activity Model Analyses

Design support solution
 Predict support performance and resource use
 Perform task analysis
 Identify potential task
 Define potential task
 Assemble product in focus task set
 Define support solution
 Define support policy
 Develop support plan
 Complete task procedures
 Assemble support solution
Assess support performance

[Figure 3](#) provides a pictorial view of the activities/tasks and desired outcomes that occur during the Engineering and Manufacturing Development Phase/Design Support Solution Activity. The purposes of Engineering and Manufacturing Development are to: develop a system; reduce integration and manufacturing risk; ensure operational supportability with particular attention to reducing the logistics footprint; implement human systems integration; design for producibility; ensure affordability and protection of critical program information; and demonstrate system integration, interoperability, safety and utility. Supportability products such as Integrated Electronic Technical Manuals (IETM), integrated parts lists, training programs of instruction, maintenance plans, and indented parts lists are outcomes of these activities/tasks.

2.3.3 Logistics Product Data Generated (by Entity)

“X” Entities to the indenture level commensurate with the analysis
BA - Reliability, Availability, and Maintainability Characteristics
BB - Item Function Data
BC - Failure Modes and Item Function Data
BD - Reliability, Availability, and Maintainability Indicator Characteristics
BE - War/Peace Reliability, Availability, and Maintainability Indicator Characteristics
BF - Failure Mode and Reliability Centered Maintenance Analysis Data
BH - Failure Mode Task
BI - Failure Mode Indicator Mission Phase Code Characteristics
BK - Reliability, Availability, and Maintainability Criticality
BL - Mission Phase Operational Mode
CA - Task Requirement
CB - Subtask Requirement
CD - Sequential Subtask Description
CG - Subtask Personnel Requirement
CE - Task Remark
CF - Task Remark Reference
CG - Task Support Equipment
CH - Task Manual
CI -Task Provisioned Item

CJ - Job and Duty Assignments
CK - Task Inventory
CL - Task/Subtask Associated Narrative
CLL - Warning, Cautions, Notes Narrative Data
CM - Electronic Documentation
CN - Maintenance Procedure Inventory
CO - Maintenance Procedure Task Sequence
CQ - Subtask Digital File Data
CR - Subtask Support Equipment Data
CS - Subtask Provisioned Item Data
CT - Subtask Objective States Data
CU- Circuit Breaker Group Objective States Order Data
CUU - Subtask Circuit Breaker Objective States Data
CV - Scheduled Maintenance Events Data
CW - Scheduled Maintenance Sampling Data
HA - Item Identification
HB - Additional Reference Numbers
HBA - Additional National Stock Number Data
HC - Contractor Technical Information Code (CAGE)
HD - Price
HG - Part Application Provisioning
HGA - Circuit Breaker Park Application Identifier
HH - Overhaul-Kit Next Higher Assembly PLISN
"E" Entities for support, test and training, equipment, as required
"U" Entities for all units under test, as required
"F" Entities for identification of new or modified facilities, as required
"G" Entities for identification of new or modified skills, as required
"J" Entities for identification of transportability requirements

ENGINEERING AND MANUFACTURING DEVELOPMENT PHASE

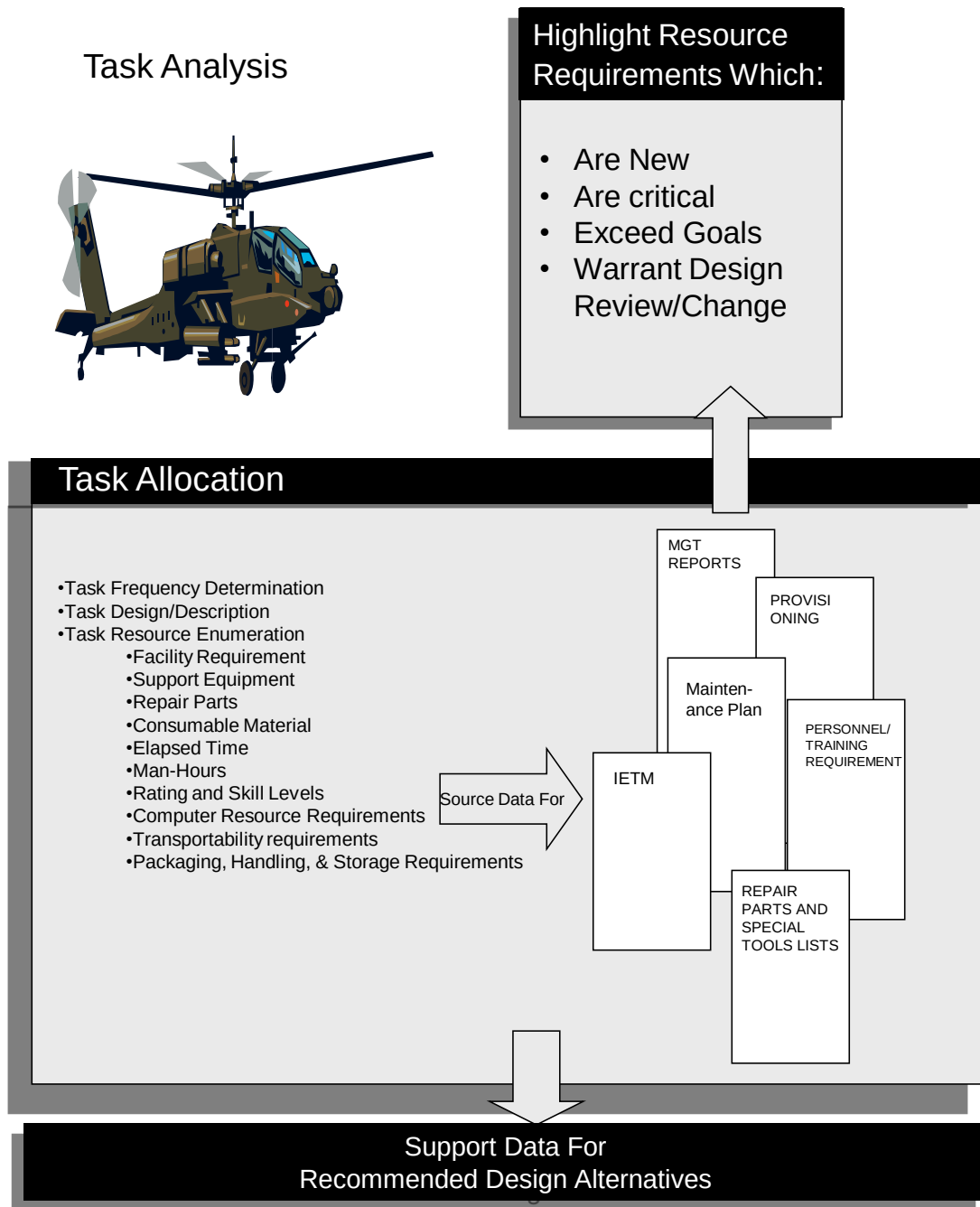


FIGURE 3 - ENGINEERING AND MANUFACTURING DEVELOPMENT PHASE

2.4 Life Cycle Phase: Production & Deployment Phase/Commission Support System

2.4.1 DOD Life Cycle Framework and TA-STD-0017 Analyses

Conduct Supportability Test, Evaluation, and Verification (Activity 17)

Establish Provisioning Requirements (Activity 12.8)

Perform Provisioning Screening (Activity 12.11)

Perform early fielding analysis (Activity 13)

2.4.2 AP239 Activity Model Analyses

Assess Support Performance

Define support solution (provisioning requirements)

[Figure 4](#) provides a pictorial view of the activities/tasks and desired outcomes that occur during the Production & Deployment Phase/Commission Support Solution. The purpose of this phase is to achieve an operational capability that satisfies mission needs. Supportability products are updated based upon the test and evaluation process and products such as initial provisioning data are generated to establish initial supply requirements.

2.4.3 Logistics Product Data Generated (by Entity)

“X” Entities to the indenture level commensurate with the analysis

HA - Item Identification

HB - Additional Reference Numbers

HBA - Additional National Stock Number Data

HC - Contractor Technical Information Code CAGE

HD - Price

HF - Item Packaging Requirement

HG - Part Application Provisioning

HH - Overhaul-Kit Next Higher Assembly PLISN

HJ - Provisioning Reference Designation

HK - Parts Manual Description

HM - Basis of Issue

HN - Provisioning Serial Number Usable On Code

HO - Provisioning System/End Item Usable On Code

HP - Design Change Information

HQ - Serial Number Effectivity

HR - Design Change Usable on Code

HX - Design Change Document Data

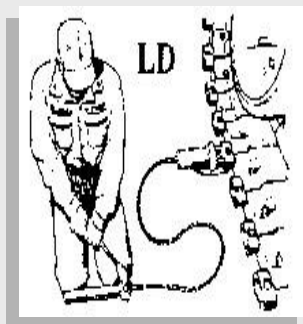
HY - Part Application Identification Document Data

HZ - CAGE Reference Number Document Data

PRODUCTION & DEPLOYMENT PHASE

- Formulate T & E Strategy (e.g., Critical Issues to be Examined and Planned Testing to Resolve These Issues)
- Establish T & E Program Objectives and Criteria and Identify Test Resources, Procedures, and Schedules
- Develop System Support Package Component List

• Analyze T&E Results: Develop Corrective Actions:



UPDATE
SUPPORT PLAN
AND LOGISTICS
PRODUCT DATA

SUPPORT
PLAN

TESTING
DT/UT



- Analyze Supportability Data;
Identify Improvement areas;
Develop Corrective Action;
Implement Via ECP, MWO/PIP,
As Applicable

OPERATIONAL



FIGURE 4 - PRODUCTION & DEPLOYMENT PHASE

2.5 Operations & Support Phase/Provide Support

2.5.1 DOD Life Cycle Framework and TA-STD-0017 Analyses

Perform Materiel Fielding Analysis (Activity 13)

Perform Post Product Support Analysis (Activities 14, 15, and 16)

2.5.2 AP239 Activity Model Analyses

Analyze support feedback

Collect data and provide feedback

[Figure 5](#) provides a pictorial view of the activities/tasks and desired outcomes that occur during the Operation and Support Phase/Provide Support Activity. Field feedback regarding supportability of the system and identification of post product support problems are important aspects of this phase. Collecting and analyzing field feedback information can affect the existing support solution and lead to new design solutions. The loss or impending loss of sources of supply can result in organic manufacturing; modification of existing design to accommodate new sources; or intensive management of existing sources decisions. Each of these decisions must be analyzed from a cost and risk standpoint to establish the best post production support approach.

2.5.3 Logistics Product Data Generated (by Entity)

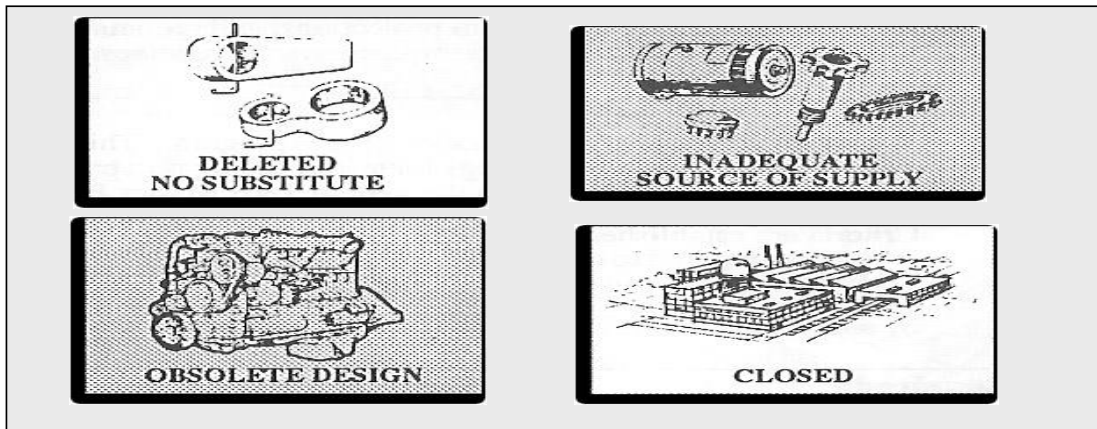
All Entities and Attributes, As Appropriate

Operation & Support Phase

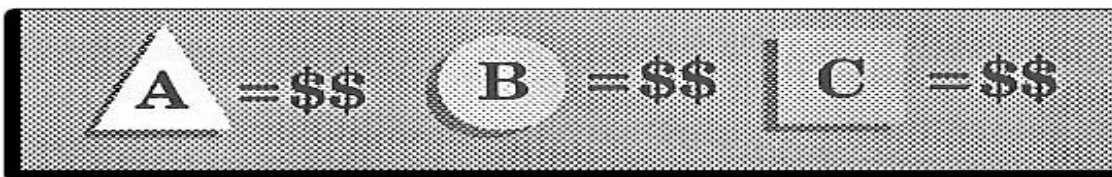
Subtasks:

- Develop and Document a Post Production Support Analysis Plan (PPSAP) Which Will:

- Identify Potential Post Production Support Problem



- Analyze Alternative Solutions and Their Costs and Risks



- Outline Estimated Funding and Actions Required to Implement Preferred Solution(s), E.G.

- Establish Manufacturing/Repair Capabilities
- Modify Technical Data Package
- Intensify Supply Management of Critical Items

FIGURE 5 - OPERATION & SUPPORT PHASE

3. CHAPTER 3, LOGISTICS PRODUCT DATA ENTITIES AND ATTRIBUTES

3.0 Introduction

The Logistics Product Data Entities, Attributes and data element definitions are described in the main body of the standard ([Section 2](#)) and [Appendix A](#). This section summarizes Logistics Product Data functional information for the following topics:

- Description
- Hardware Indenture Level Relationship
- When Required
- Data Source, Functional Responsibility/Interface Requirements
- Primary Use

3.1 “X” Entities - Cross Functional Requirements

Description:

The “X” entities have attributes that cross multiple functional areas or link various functional data entities. These entities include: functional and physical breakdown, LCN assignment and application of Usable on Codes (UOC), TM numbers, and Requiring Authority/Customer provided Level of Repair Analysis (LORA) modeling information.

Hardware Indenture Level Relationship:

“X” entity information will be used at any indenture level since it establishes the major keys for entry/storage/transfer of data in all entities.

Data Source, Functional Responsibility/Interface Requirements:

Information in portions of the “X” entities is provided by the Requiring Authority/Customer and may be included with the solicitation, or addressed at the Initial Integrated Product Team Meeting. This information is used to document supply, maintenance, and personnel data in support of tradeoff analysis and could be obtained from accomplishment of TA-STD-0017 Activities 4 through 8.

Primary Use:

The “X” entities provide the primary key fields for entry, storage and transfer of Logistics Product Data. It is also used to create the TA-HB-0007-1, LSA-126 Report.

3.2 “A” Entities - Operations and Maintenance Requirements

Description:

The “A” entities are structured to consolidate planned system operation, operating and maintenance environments information, and those system requirements that must be met.

Hardware Indenture Level Relationship:

“A” entity information is prepared for the entire system, to include Requiring Authority/Customer Furnished Equipment/Materiel, which will require operation/maintenance actions.

When Required:

Documented information for initial operation/maintenance tasks for the “A” entity is developed during the Materiel Solution Analysis/Generate Support Solution Phase. The “A” entity should be completed during Materiel Solution Analysis Phase via the Supportability & Supportability Related Design Factors Analysis. “A” entity information must be available prior to or concurrent with initiation of the Functional Requirements Analysis in the Materiel Solution Analysis Phase.

Data Source, Functional Responsibility/Interface Requirements:

“A” entity information is normally developed by the Requiring Authority/Customer via accomplishment of TA-STD-0017, Activity 8, and made available in applicable program requirement documents/contracts.

Primary Use:

These entities document operational and maintenance concepts, supportability, and supportability related design constraints. “A” entity information is developed and documented in the Reliability, Availability, and Maintainability (RAM) Rationale Product. As data is updated, it is included in the Capabilities Development Document.

3.3 “B” Entities - Reliability, Availability, and Maintainability; Failure Modes, Effects and Critical Analysis; and Maintainability Analysis

Description:

These entities identify component functions, outline maintenance concepts used for design and support planning purposes, and identify imposed design conditions such as environmental, fail-safe, or nuclear hardness requirements. They summarize Reliability, Availability, and Maintainability (RAM) and related availability characteristics resulting from Failure Modes and Effects, Criticality Analyses (FMECA), Damage Mode and Effects Analysis used in survivability and vulnerability assessments and maintainability predictions; provide for evaluation of logistics functions impacting RAM; document results of the application of Reliability Centered Maintenance (RCM) logic; and provide for narratives related to potential system redesign. Reliability and Maintainability (R&M) parameter relationships are shown in Figures [6](#), [7](#), and [8](#).

Hardware Indenture Level Relationship:

“B” entities are prepared to an indenture level that supports allocation of R&M parameters. Other B entities are completed during the Technology Refinement/Generate Support Solution Phase for lower system indenture levels for each reparable item.

When Required:

“B” entities should be completed early in the Technology Development/Generate Support Solution Phase as results of R&M Analyses. This analysis is selectively applicable during the Materiel Solution Analysis/Generate Support Solution Phase but may be deferred to the Technology Development/Generate Support Solution Phase. Analysis results must be available to initiate Task Analysis, which may be selectively applied in the Technology Development/Generate Support Solution Phase.

Data Source, Functional Responsibility/Interface Requirements:

System functional requirements documented on the “B” entities are identified in the functional analysis step of the system engineering process and, via TA-STD-0017 Activity 9, initiated by the Requiring Authority/Customer, during Materiel Solution Analysis/Generate Support Solution. The Performing Activity is responsible for this analysis during subsequent phases. The results of FMECA or equivalent analysis must also be used as input for this task.

Primary Use:

The “B” entities provide input to reliability and maintainability products/analyses; are used to assess achievement of R&M goals; and to indicate corrective actions needed when specified requirements are not being met. It is also used to create the TA-HB-0007-1 LSA-050 and LSA-056 Reports.

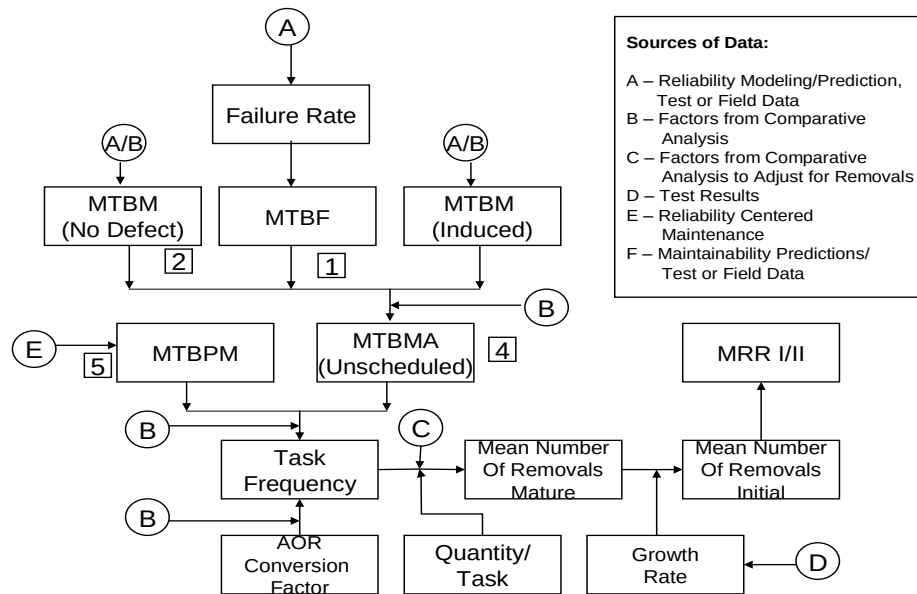


FIGURE 6 - RELIABILITY PARAMETER RELATIONSHIPS

Figures 6, 7 and 8 provide a pictorial relationship of the reliability, maintainability, and availability attributes contained in GEIA-STD-0007. The figures present a building block approach to calculating each of the attributes, although the specific calculations are contained in Appendix A of the standard. The Sources of Data legend contained in Figure 6 applies to the other figures and provides high level sources that could be used to develop the attributes. The numbered boxes indicate the parameters in Figures 6 and 7 that are used to calculate the availability attributes in Figure 8. Figure 6, Reliability Parameter Relationships, should be read from top to bottom, e.g., reliability modeling/prediction analysis or test/field feedback data would be used to establish an item's failure rate. Failure rate is used to calculate mean time between failure, which is used in Figure 8 to calculate inherent availability. The acronyms used in the figures are provided as follows:

MRR I/II - Maintenance Replacement Rate I & II
 MTBPM - Mean Time Between Preventive Maintenance
 MTBMA - Mean Time Between Maintenance Actions
 MTBM - Mean Time Between Maintenance
 MTBF - Mean Time Between Failure
 MTTR - Mean Time To Repair
 MDT - Mean Down Time
 ALDT - Administrative and Logistics Delay Time
 Ai - Inherent Availability
 Ao - Operational Availability
 Aa - Achieved Availability

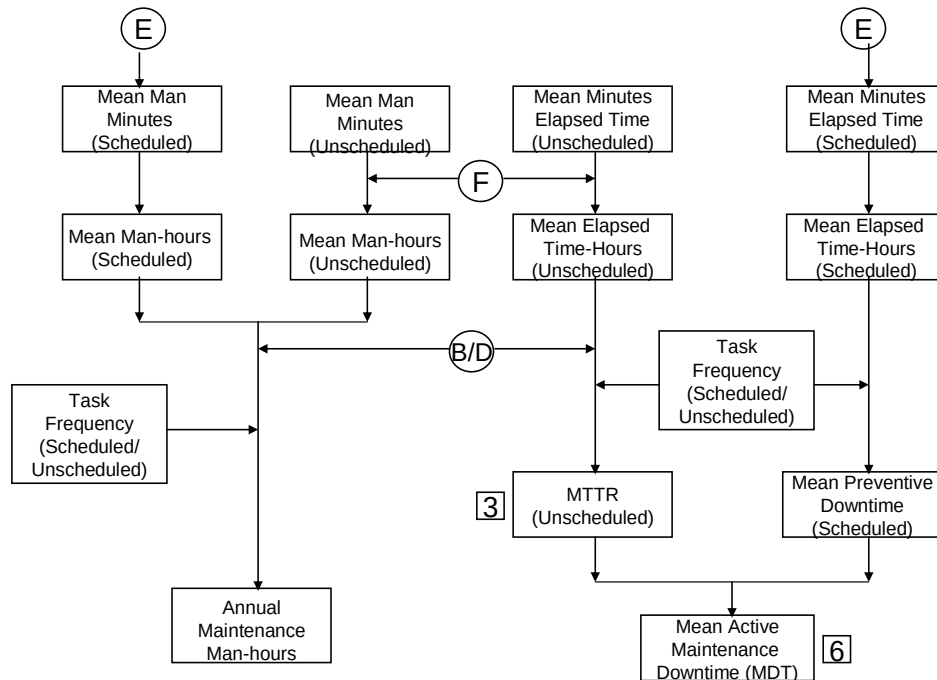


FIGURE 7 - MAINTAINABILITY PARAMETER RELATIONSHIPS

Figure 7, Maintainability Parameter Relationships, should also be read from top to bottom following the elapsed time (minutes and hours) and manpower (minutes and hours) relationship flows. The task frequency would be obtained from the [Figure 6](#) reliability attributes.

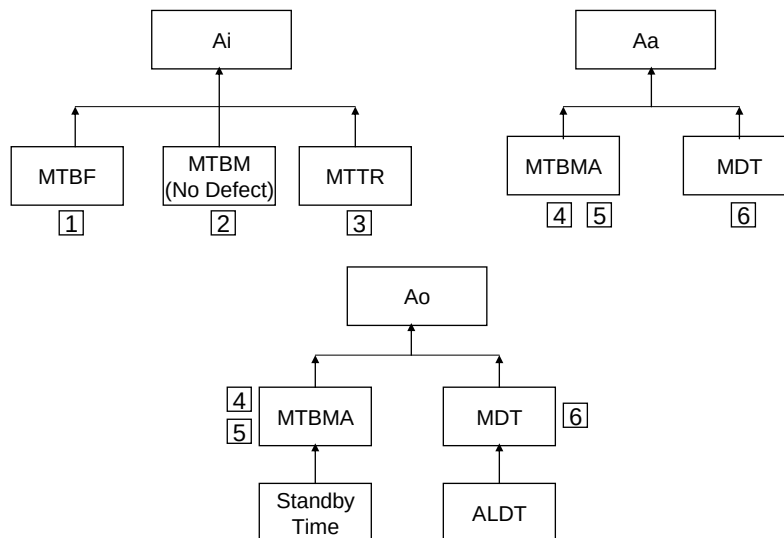


FIGURE 8 - RELIABILITY, MAINTAINABILITY AND AVAILABILITY PARAMETER RELATIONSHIPS

Figure 8, Reliability, Maintainability and Availability Parameter Relationships, should be read from the bottom up for each of the individual availability attributes. Standby time is an operational value and the administrative logistics delay time is normally a requiring authority/customer provided value based upon actual experience or field feedback.

3.4 “C” Entities - Tasks Inventory, Task Analysis, Personnel and Support Requirements

Description:

These entities summarize Operation/Maintenance (O/M) data that consolidate O/M tasks for repairable assemblies. They also list support requirements (training equipment, facilities, tools, and support equipment); and identify task performance factors for skill positions required to operate/maintain the system. These entities result from analyses of RCM, maintainability, and maintenance tasks. The “C” entities provide detailed, step-by-step procedures for performance of tasks listed in a Task Product, to include specific skill specialty requirements and applicable task man-hours per skill specialty. These entities also provide data needed to develop TMs and IETMs (e.g., S1000D), training programs of instruction, supply support, and personnel requirements.

Hardware Indenture Level Relationship:

The “C” entity begins at the same indenture level as the “B” entities. During the Technology Development/Generate Support Solution Phase, they are prepared for all new or critical tasks identified. In the Engineering and Manufacturing Development/Generate Support Solution Phase, the entities are completed for all significant operation, maintenance, and support tasks.

When Required:

Initiation begins in Technology Development/Generate Support Solution as part of Functional Requirements Analysis. Selected data from Task Analysis are documented during and completed during Technology Development/Generate Support Solution with all data identified during the Engineering and Manufacturing Development/Generate Support Solution Phase.

Data Source, Functional Responsibility/Interface Requirements:

The Performing Activity is responsible for O/M Tasks accomplished via TA-STD-0017, Activity 12. Managing these analyses requires closer coordination since most system engineering disciplines and ILS functional elements are involved. Maintenance engineering must coordinate requirement training and technical publications. Design, human engineering, R&M, and safety also have review/input responsibility.

Primary Use:

The “C” entities allocate tasks by maintenance function/level; prepare draft maintenance publications; highlight maintenance tasks requiring new/modified training equipment, facilities, tools, and support equipment; summarize training, personnel and supply support requirements for each maintenance task; identify new/altered facility requirements; and new/unique support equipment, associated test programs, and tasks requiring these support items. It is also used to create the TA-HB-0007-1, LSA-001, LSA-004, LSA-019, LSA-024, LSA-068 and LSA-075 Reports.

3.5 “E” Entities - Support Equipment and Training Material Requirements

Description:

The “E” entities are structured to consolidate information describing existing or new support/test equipment or training material, calibration requirements, physical characteristic, and test parameters. These data help identify hardware and software elements required for off-line testing at applicable maintenance levels.

Hardware Indenture Level Relationship:

The “E” entity is required for each item of support/test/training equipment identified in the “C” entities. Each item listed that requires support, should also identify a function to be performed using that support item. All support items, tests, and training equipment should be documented via the “E” entities.

When Required:

The “E” entities are generally prepared during the Engineering and Manufacturing Development/ Generate Support Solution Phase.

Data Source, Functional Responsibility/Interface Requirements:

Support equipment and training materiel requirements identified via TA-STD-0017, Activity 12, are the responsibility of the Performing Activity. Evaluation criteria and tradeoff results from training tradeoffs and diagnostic tradeoffs accomplished in conjunction with TA-STD-0017, Activities 10 and 11 should be available for input to the analysis. Coordination with training specialists and Test, Measurement, and Diagnostic Equipment Code (TMDE) specialists may be necessary to describe/justify training and support test equipment requirements publications.

Primary Use:

Data included on the “E” entities provide design information together with the more detailed description and justification required for Support Equipment Recommendation Data (SERD). Additional information from these entities provide for the TMDE Requirements Product, which may be used to propose entry of a new item of TMDE into the DA TMDE Register. A Support Equipment Tool List of all stock listed, commercial, modified, or developmental tools required can also be generated. It is also used to create the TA-HB-0007-1, LSA-070, LSA-071, LSA-072 and LSA-076 Reports.

3.6 “U” Entities - Unit Under Test Requirements Description**Description:**

The “U” entities are structured to identify Unit Under Test (UUT), parameters to be measured, and applicable Test Program Sets (TPS) (unique combination of hardware/software elements) required at applicable maintenance levels to test the unit using support/test equipment identified in the “E” entities.

Hardware Indenture Level Relationship:

The “U” entity is required for each unit to be tested using support/test equipment defined in the “E” entities.

When Required:

The “U” entities are prepared from Task Analysis Results, generally during the Engineering and the Manufacturing Development/Generate Support Solution Phase. Coordination with the Training Community is required on any training equipment and device development actions.

Data Source, Functional Responsibility/Interface Requirements:

The Performing Activity is responsible for accomplishing TA-STD-0017, Activity 12, and unit under test functions that support troubleshooting of repairable items.

Primary Use:

“U” entities are used to develop the TMDE Requirements Product and the Calibration and Measurement Requirements Product, and to augment other support/test equipment related analysis. In addition, “U” entity information provides UUT configuration identification and identifies fault isolated replaceable units. It is also used to create the TA-HB-0007-1, LSA-070, LSA-071, LSA-072 and LSA-076 Reports.

3.7 “F” Entities - Facility Considerations**Description:**

The “F” entities describe and justify all proposed, special, or added facility requirements that are indicated as a result of the maintenance task analysis. Sketches or other Digital Facility information may be included as part of these entities. These data are required to provide facility designers with technical information necessary to prepare facility plans.

Hardware Indenture Level Relationship:

The “F” entities are used for each facility requirement identified in the “C” entities. Each maintenance task described in the “C” entities that identifies a function requiring a facility should be documented in the “F” entities.

When Required:

The “F” entities are generally prepared during the Materiel Solution Analysis Phase/Generate Support Solution Phase.

Data Source, Functional Responsibility/Interface Requirements:

TA-STD-0017, Activity 12 provides source information for facility requirements. Facility designers have primary responsibility for the “F” entities.

Primary Use:

Facility Requirements are generated from data summarized in the “C” entities, which list all maintenance tasks which require facilities. The “F” entities are used by ILS managers to justify new or modified facility requirements. When specified by the requiring authority/customer, “F” entity can be used by facility planners to program work load requirements created by the new system at existing facilities. New/modified depot facility requirements documented in the “F” entities are included in the Depot Maintenance Interservice Data product. The technical information described in the “F” entities are used by facility designers to prepare facility plans.

3.8 “G” Entities - Personnel Skill Considerations

Description:

The “G” entities describe and justify any new or modified personnel skills required to support the system/equipment at the applicable operations and maintenance levels.

Hardware Indenture Level Relationship:

The “G” entities document each new/modified personnel skill identified via task analysis, skill, and training analysis documented in the “C” entity. Operator/maintenance tasks identifying functions to be performed by a new or modified personnel skill should be documented in the “G” entities.

When Required:

The “G” entities information is prepared during the Engineering and Manufacturing Development/Generate Support Solution Phase.

Data Source, Functional Responsibility/Interface Requirements:

Training tradeoffs (TA-STD-0017, Activities 11.5 and 11.6), should be available as input to the skill evaluation. Training specialists are the primary preparers of “G” entities.

Primary Use:

A Training Task List is generated from data migrating from the “C” entities. It is a product by Skill Specialty Code (SSC) that rationalizes training recommendations and training location requirements. A Task Inventory Product is a listing of tasks required to operate and maintain the system. The “G” entity information provides specific input to the Consolidated Manpower, Personnel and Training product. This product summarizes critical FMECA data, task information, and new/modified skill requirement analysis. Additional information recorded via the “G” entities are used by ILS element managers/training specialists to prepare Qualitative and Quantitative Personnel Requirement Information (QQPRI), System Training Plans (STRAP), Individual and Collective Training Plans (ICTP), and resultant training documentation. It is also used to create the TA-HB-0007-1, LSA-075 Report.

3.9 “H” Entities - Packaging and Provisioning Requirements

Description:

These entities document parts data related to provisioning screening, packaging, price analysis, parts breakout coding, and common maintenance data. Data is completed for each item of a system to include repairable/nonrepairable items, bulk materials, common hardware, and common and peculiar support equipment. Other “H” entities capture application data of items identified by the static parts data entities. These include information that is dependent upon the specific application of the part, e.g., next higher assembly (NHA), quantity per assembly (QPA), source, maintenance and recoverability (SMR) code, Acquisition Method Code (AMC), etc.

Hardware Indenture Level Relationship:

Data is developed to an indenture level sufficient to support the maintenance and support concepts and provisioning documentation requirements of the acquisition. The indenture level is specified by the requiring authority/customer and may include nonrepairable piece-parts and assemblies; bulk items; repairable end items, components and assemblies; tools, support, and training equipment; and support resources.

When Required:

The “H” entities are generally prepared during Engineering and Manufacturing Development /Commission Support System Phase.

Data Source, Functional Responsibility/Interface Requirements:

Entity completion requires a continuous interchange of information among personnel responsible for provisioning, packaging, cataloging, TM preparation, and maintenance planning. The Performing Activity is responsible for developing the “H” Entities Data via TA-STD-0017, Activity 12.

Primary Use:

The “H” Entities are used to prepare Provisioning Technical Documentation; selection procedures to identify repair parts requirements to support fielded equipment; Provisioning Parts Breakout Product; recommended Spare Parts List for Spares Acquisition Integrated with Production (SAIP); and other provisioning oriented products; e.g., Indentured Parts List, Draft and a proof Repair Parts and Special Tools List (RPSTL), an Illustrated Parts Breakdown (IPB), a Stockage List Type Four, Authorization Items List, Components of End Item (COEI) List, Basic Issue Items (BII) List, Additional Authorization List (AAL), Expendable/Durable Supplies and Materials List (ESML), and Stockage List Type Three. It is also used to create the TA-HB-0007-1, LSA-009, LSA-025, LSA-030, LSA-032, LSA-036, LSA-040, LSA-068, LSA-078, LSA-080, LSA-151 and LSA-152 Reports.

3.10 “J” Entities - Transportability Considerations**Description:**

The “J” entities are designed to capture transportability engineering requirements of an end item.

Hardware Indenture Level Relationship:

The “J” entity information is prepared for the end item in its shipping configuration. When sectionalized for transport, a “J” entity is completed for each section of the end item. It may also be completed for critical subcomponents. Removing external items and storing them inside the item during transport is not considered sectionalization.

When Required:

The “J” entities are generally prepared during the Technology Development/Generate Support Solution Phase as a result of transportability analysis.

Data Source, Functional Responsibility/Interface Requirements:

Transportation requirements/constraints identified by the requiring authority/customer via TA-STD-0017, Activity 12 should be available for transportability analysis. Evaluation criteria and results from transportability tradeoffs should also be available. Transportation specialists are the primary users of the “J” entities.

Primary Use:

Documented “J” entities are used by ILS element managers/transportation specialists to prepare transportability plans. The Transportability Product captures information critical to shipping and transport of major end items of equipment. It includes environmental/hazardous material information needed for safe transport of an item by air, highway, rail, and sea. It is also used to create the TA-HB-0007-1, LSA-085 Report.

4. CHAPTER 4, CONTRACTING FOR GEIA-STD-0007**4.0 Acquiring the Right Data**

The extent of the identification of the required logistics data for an acquisition program depends primarily upon the supportability concept for the weapon system such as the maintenance concept (e.g., applicable levels of repair, the level of contractor support, etc.), the distribution concept (e.g., subject to strategic distribution, long term storage (war reserve requirements), return for repair, etc.), the complexity of the system, and the phase of the acquisition cycle. As development progresses and the basic design and operational characteristics are established, this identification becomes a process of analyzing specific design and operational data to identify detailed logistics support needs more completely. This analysis can be very costly and involve the development of a considerable amount of data. In determining the timing and scope of this analysis and the corresponding data, consider the following points:

- a. Logistics support resource requirements for different system alternatives should only be identified to the level required for evaluation and tradeoff of the alternatives.
- b. Logistics support resources must be identified in a time frame that considers the schedule of developing required documentation (e.g., Repair Parts and Special Tools List (RPSTL)) or completing a required action (e.g., initial provisioning).

- c. Different levels of data documentation can be applied to the identification of logistics support resource needs. For example, early in a program, supply support needs can be identified through documentation of only a few data products (e.g., Reference Number, Contractor and Government Entity (CAGE), Item Name, Provisioning Contract Control Number (PCCN), Weight, Dimensions, Long Lead Item Description, and Usable On Code (UOC)); later the total range of data products required to accomplish initial provisioning can be documented.
- d. Different levels of data documentation can also be applied respective to the economics of development of the required data. For example, it may be more cost effective for the government to develop some or all of the Packaging and/or Transportation Data required for support of a system.
- e. Detailed input data for identification of logistics support resource needs is generated by other systems engineering functions; for example, RAM failure rates drive the calculation of the provisioning Maintenance Replacement Rates. Therefore, analysis, documentation requirements, and timing must be coordinated between the systems engineering programs to avoid duplication of effort and to assure availability of required input data.
- f. Data deliveries can be assessed and changed at Program Management Reviews, Technical Interchange meetings, and Working Group Meetings, or with contract modifications, as required.
- g. Data requirements needed to validate contractor performance.

4.1 Identification of Multifunctional Data

Failure to adequately identify data requirements can be just as costly as purchasing too much data. To that end, each functional and engineering specialty area must play in the tailoring of the Logistics Product Data requirements, including manpower and human factors engineering personnel.

It is essential that coordination and interfacing of engineering disciplines and logistics functional elements be effected to maximize the usage of data developed by each program element. Effective coordination with related program elements can produce benefits by eliminating costly duplications of effort and redundant data deliveries. Results of analyses from other program elements can be used as source data for the Logistics Product Data. For example, inputs from the design, reliability, maintainability, human engineering, safety, and other engineering program elements may be required to satisfy the logistics requirements.

Data delivered under a tailored supportability program should consist of information required by the requiring authority/customer to conduct logistics planning and analysis, influence program decisions, assess design status, and verify performing activity performance. Below is a list of general areas of supportability that must be considered during product development. The individual requirements of the product's supportability concept should be taken into consideration when requesting data.

- Reliability and Maintainability
- Maintenance Planning
- Support and Test Equipment
- Supply Support
- Manpower, Personnel, and Training
- Facilities
- Packaging, Handling, Storage, and Transportation
- Cross Functional Analysis Data

Figures 9 through 15 provide matrices of the logistics product data elements and the major products, for the above functional areas, that can be generated from the data contained in GEIA-STD-0007. These products can be generated using existing government and industry Logistics Support Analysis Record software. If a logistics product is specifically defined in the TechAmerica HB-0007-1 then the report number is contained in the matrix header (e.g. LSA-004 for MAC) along with the data requirements. The matrices identify the key fields required (K) when specific data elements are used, fields required to process and produce a product (P), specific data elements recommended to produce a meaningful product (X) and data elements that are used in computing other data elements (C). If a product only requires the keys from an entity or it uses all elements (to include keys), the matrices indicate this with an "All Keys" or "All Elements" designation, respectively. Similarly, if all elements of an entity are used to process a product, the entity will have a "Process All Elements" designation. The matrices provide a guide for identifying the specific data elements and related keys that are needed to produce specific logistics products. The matrices can be used to complete the Attribute Selection Sheet discussed later in this chapter.

4.1.1 Reliability and Maintainability Data

Data generated during the reliability and maintainability analysis process are documented in the B and C entities. The Failure Modes, Effects, and Criticality Analysis (FMECA) forms the basis for follow-on maintainability analysis, Reliability Centered Maintenance (RCM) analysis, and maintenance task analysis. In addition, this data is used for repair level analysis and repair versus discard analysis. [Figure 9](#) provides a matrix of the data elements required to produce the FMECA and RCM products.

Figure 9 Logistics Product Data Products for Reliability and Maintainability	Reliability Centered Maintenance LSA-050	FMECA LSA-056
XA Entity	All Keys	All Keys
XB Entity	All Keys	All Keys
XC Entity	All Keys	All Keys
XF Entity	Process all Elements	Process all Elements
XG Entity	Process all Elements	Process all Elements
XH Entity	Process all Elements	Process all Elements
AA Entity	K	
required_achieved_availability	X	
required_inherent_availability	X	
reliability_centered_maintenance_logic_utilized	X	
AG Entity	All Keys	
annual_operating_requirement	X	
reliability_operational_requirement_indicator	X	
BA Entity	K	K
conversion_factor	X	
failure_rate_data_source		X
<u>reliability availability and maintainability item function narrative</u>		X
<u>reliability availability and maintainability maintenance concept narrative</u>		X
<u>reliability availability and maintainability minimum equipment list narrative</u>		X
<u>reliability availability and maintainability qualitative and quantitative maintainability requirements narrative</u>		X
<u>reliability availability and maintainability maintenance plan rationale narrative</u>		X
BB Entity	All Elements	All Elements

FIGURE 9 - RELIABILITY AND MAINTAINABILITY PRODUCT MATRIX

Figure 9 Logistics Product Data Products for Reliability and Maintainability	Reliability Centered Maintenance LSA-050	FMECA LSA-056
BC Entity	All Elements	All Elements
BD Entity	K	K
failure_rate	X	X
failure_rate_measurement_base	X	X
mean_time_between_preventive_maintenance	X	
mean_time_between_preventive_maintenance_ measurement_base	X	
BF Entity	All Elements	All Keys
engineering_failure_mode_mean_time_between_failure		X
engineering_failure_mode_mean_time_between_failure_ measurement_base		X
failure_mode_ratio		X
failure_damage_mode_effect_end_effect_narrative		X
failure_damage_mode_effect_local_narrative		X
failure_damage_mode_effect_next_higher_narrative		X
failure_cause_narrative		X
failure_damage_mode_narrative		X
failure_mode_detection_method_narrative		X
failure_mode_predictability_narrative		X
failure_mode_remarks_narrative		X
failure_mode_redesign_recommendations_narrative		X
BH Entity	K	All Keys
maintenance_interval	X	
maintenance_interval_measurement_base	X	
BI Entity	All Keys	All Elements
failure_effect_probability	X	
failure_mode_criticality_number	X	
failure_probability_level	X	
operating_time		
operating_time_measurement_base		
BK Entity		All Elements
BL Entity		All Elements

FIGURE 9 - RELIABILITY AND MAINTAINABILITY PRODUCT MATRIX (CONTINUED)

Figure 9 Logistics Product Data Products for Reliability and Maintainability	Reliability Centered Maintenance LSA-050	FMECA LSA-056
CA Entity	All Keys	
referenced_end_item_acronym_code	P	
referenced_logistics_support_analysis_control_number	P	
referenced_alterate_logistics_support_analysis_control_number	P	
referenced_logistics_support_analysis_control_number_type	P	
referenced_task_code	P	
annual_operating_requirement_logistics_support_analysis_control_number	P	
annual_operating_requirement_alterate_logistics_support_analysis_control_number	P	
annual_operating_requirement_logistics_support_analysis_control_number_type	P	
task_annual_operating_requirements_measurement_base	X	
task_frequency	X	
measured_mean_elapsed_time	X	
predicted_mean_elapsed_time	X	
measured_mean_man_hours	X	
predicted_mean_man_hours	X	
CB Entity	All Keys	
CD Entity	All Keys	
skill_specialty_code	X	
new_or_modified_skill_specialty_code	X	
subtask_mean_man_minutes	X	
GA Entity	K	
skill_level_code	X	
GB Entity	K	
new_or_modified_skill_level_code	K	

FIGURE 9 - RELIABILITY AND MAINTAINABILITY PRODUCT MATRIX (CONTINUED)

4.1.2 Maintenance Planning

These products provide maintenance planning information to the requiring authority/customer that may be used to develop initial fielding plans for the end item's support structure. The products may also be used to verify that the maintenance actions and support structure are aligned with the requiring authority's/customer's requirements and maintenance concept. The information contained within these products are associated with repairable items to the level of detail specified on contract. The repairable items are identified within the hierarchy of the end item broken down by an agreed upon configuration control method. Maintenance planning products identify all preventive and corrective maintenance actions along with the required spares and support equipment. The products also provide supporting information justifying the need for each maintenance action, e.g., elapsed time of maintenance actions; task frequency; failure rate of an item; Mean Time To Repair an item; and an item's man-hour allocation by maintenance action and level. [Figure 10](#) provides a matrix of the data elements required to produce maintenance planning products such as Preliminary Maintenance Allocation Chart (PMAC), Maintenance Allocation Chart (MAC), Task Analysis, Maintenance Plan, and Preventive Maintenance, Checks and Services (PMCS). The Maintenance Plan Products have additional attributes that are calculated from the attributes in GEIA-STD-0007. These attributes and their respective calculations are provided below and should be included in contractual documents.

Below Depot Scrap Rate (BDSR)

The predicted number of times in one maintenance cycle that a field level repairable will be disposed of at the Organizational/Intermediate levels of maintenance (9 character numeric field with a 4 character decimal place).

$$BDSR = MTD(CBD) \times MRR$$

MTD(CBD) - condemned_below_depot_maintenance_task_distribution

MRR - maintenance_replacement_rate_i

Depot Scrap Rate (DSR)

The expected percentage of the items scrapped at the depot level per maintenance cycle (9 character numeric field with a 3 character decimal place).

$$DSR = \frac{MTD(CAD)}{MTD(D) + MTD(CAD)}$$

MTD(CAD) - condemned_at_depot_maintenance_task_distribution

MTD(D) - depot_shipyard_maintenance_task_distribution

Interval

The recommended operating hours, or usage rate, followed by an alpha character indicating the type of maintenance requirements for an item (9 character numeric field with a 1 character decimal place). The calculation and codes are as follows:

$$INTERVAL = \frac{AOR \times CF}{TF}$$

AOR - annual_operating_requirement

CF - conversion_factor

TF- task_frequency

Interval Code (1 character alphabetic field):

P - Preventive
C - Corrective
T - Servicing
U - Calibration

Rotable Pool Factor (RPF)

The predicted number of times in one maintenance cycle that an item is removed from its next higher assembly at the Organizational/Intermediate level of maintenance, repaired at the Intermediate level and returned, ready for issue at this level (9 character numeric field with a 3 character decimal place).

$$RPF = [MTD(F) + MTD(H)] \times MRR$$

MTD(F) - intermediate_direct_support_maintenance_task_distribution

MTD(H) - intermediate_general_support_maintenance_task_distribution

MRR - maintenance_replacement_rate_i

Repair Survival Rate (RSR)

The percentage of nonserviceable repairable assets that will, through depot repair, be returned to serviceable condition (3 character numeric field).

$$RSR = \frac{MTD(D)}{MTD(D) + MTD(CAD)}$$

MTD (D) - depot_shipyard_maintenance_task_distribution

MTD(CAD) - condemned_at_depot_maintenance_task_distribution

Rework Removal Rate (RRR)

The percentage of the total quantity of a repairable assembly installed in an end item, which will require some depth of rework concurrently with that end item (3 character numeric field). RRR = overhaul_replacement_rate.

System Attrition Rate (SAR)

The percentage of depot level repairable items that fail, which will not, through repair, be returned to a serviceable condition (3 character numeric field).

$$SAR = 1 - \frac{MTD(D)}{MTD(D) + MTD(CAD) + MTD(CBD)}$$

MTD(D) - depot_shipyard_maintenance_task_distribution

MTD(CAD) - condemned_at_depot_maintenance_task_distribution

MTD(CBD) - condemned_below_depot_maintenance_task_distribution

Figure 10 Logistics Product Data Products for Maintenance Planning	PMAC	MAC LSA-004	Task Analysis LSA-019	Maint Plan LSA-024	PMCS
XA Entity	All Keys	All Keys	All Keys	All Keys	All Keys
XB Entity	K	K	K	K	K
alternate_logistics_support_analysis_ control_number				X	
logistics_support_analysis_control_number			X	X	
logistics_support_analysis_control_number indenture_code	X				
logistics_support_analysis_control_number nomenclature	X			X	X
technical_manual_functional_group_code		X	X	X	
document_code			X		
XC Entity	All Keys	All Keys	All Keys	K	All Keys
system_end_item_item_designator_code				X	
usable_on_code				X	
system/EI_provisioning_contract_control_ number				X	
XF Entity	Process all Elements	Process all Elements	Process all Elements	Process all Elements	Process all Elements
XG Entity	Process all Elements	Process all Elements	Process all Elements	Process all Elements	Process all Elements
XH Entity	Process all Elements	All Keys	All Keys	All Keys	All Keys
XI Entity		All Elements	All Elements		Process all Elements
XT Entity			All Elements		
XZ Entity			Process all Elements		

FIGURE 10 - MAINTENANCE PLANNING REPORT MATRIX

Figure 10 Logistics Product Data Products for Maintenance Planning	PMAC	MAC LSA-004	Task Analysis LSA-019	Maint Plan LSA-024	PMCS
BA Entity				K	All Keys
conversion_factor				P	
security_clearance					
support_concept					
wearout_life			X	X	
wearout_life_measurement_base			X	X	
BB Entity				All Elements	
reliability_availability_and_maintainability_ maintenance_concept_narrative				X	
reliability_availability_and_maintainability_ maintenance_plan_rationale_narrative				X	
BF Entity					All Keys
BH Entity					All Keys
CA Entity	K	K	K	K	K
referenced_end_item_acronym_code	P	P	P	P	P
referenced_logistics_support_analysis_ control_number	P	P	P	P	P
referenced_alternate_logistics_support_ analysis_control_number	P	P	P	P	P
referenced_logistics_support_analysis_ control_number_type	P	P	P	P	
referenced_task_code	P	P	P	P	P
annual_operating_requirement_logistics_ support_analysis_control_number			P	P	
annual_operating_requirement_alternate_ logistics_support_analysis_control_number			P	P	
annual_operating_requirement_logistics_ support_analysis_control_number_type			P	P	
task_annual_operating_requirements_ measurement_base			X	X	
task_frequency	C	C	X	X	
task_identification				X	
hardness_critical_procedure_code			X		
hazardous_maintenance_procedure_code			X		
measured_mean_elapsed_time			X		
predicted_mean_elapsed_time			X		
measured_mean_man_hours	C	C	X		

FIGURE 10 - MAINTENANCE PLANNING REPORT MATRIX (CONTINUED)

Figure 10 Logistics Product Data Products for Maintenance Planning	PMAC	MAC LSA-004	Task Analysis LSA-019	Maint Plan LSA-024	PMCS
predicted_mean_man_hours	C	C	X		
facility_requirement_code					
training_equipment_requirement_code					
training_recommendation					
preventive_maintenance_checks_and_ services_indicator_code					P
CB Entity	All Keys		K	K	K
referenced_subtask_alternate_logistics_ support_analysis_control_number			P		P
referenced_subtask_end_item_acronym_ code			P		P
referenced_subtask_logistics_support_ analysis_control_number			P		P
referenced_subtask_logistics_support_ analysis_control_number_type			P		P
referenced_subtask_task_code			P		P
referenced_subtask_number			P		P
subtask_description			X		X
subtask_mean_minute_elapsed_time			X		
CD Entity	K		K	K	
skill_specialty_code	X		X	X	
new_or_modified_skill_specialty_code	X		X	X	
subtask_mean_man_minutes	X		X	C	
skill_specialty_evaluation_code			X		
CE Entity	All Elements	All Elements			
CF Entity	All Elements	All Elements			
CG Entity	K	K	K		
support_item_quantity_per_task			X		
support_item_quantity_per_task_unit_of_ measure			X		
CH Entity		All Elements			All Elements

FIGURE 10 - MAINTENANCE PLANNING REPORT MATRIX (CONTINUED)

Figure 10 Logistics Product Data Products for Maintenance Planning	PMAC	MAC LSA-004	Task Analysis LSA-019	Maint Plan LSA-024	PMCS
CI Entity	All Keys		K	K	
quantity_per_task			X	X	
quantity_per_task_unit_of_measure			X		
CL Entity			All Elements		
CLL Entity			All Elements		
CM Entity			All Elements		
CN Entity			All Elements		
CO Entity			All Elements		
CQ Entity			All Elements		
CR Entity			All Elements		
CS Entity			All Elements		
CT Entity			All Elements		
CU Entity			All Elements		
CUU Entity			All Elements		
CV Entity			All Elements		
CW Entity			All Elements		
EA Entity	K	K	K	K	

FIGURE 10 - MAINTENANCE PLANNING REPORT MATRIX (CONTINUED)

Figure 10 Logistics Product Data Products for Maintenance Planning	PMAC	MAC LSA-004	Task Analysis LSA-019	Maint Plan LSA-024	PMCS
support_equipment_item_category_code	P	X	X	X	
EF Entity				All Keys	
HA entity	K	K	K	K	
item_name	X	X	X	X	
national_stock_number_federal_supply_classification		X	X	X	
national_stock_number_item_identification_code		X	X	X	
national_stock_number_activity_code			X	X	
national_stock_number_cognizance_code			X	X	
national_stock_number_materiel_control_code			X	X	
national_stock_number_special_materiel_identification_code_materiel_management_aggregation_code			X	X	
special_maintenance_item_code				X	
demilitarization_code				X	
acquisition_method_code				X	
acquisition_method_suffix_code				X	
unit_of_issue				X	
criticality_code			X	X	
circuit_breaker_type			X		
HG Entity	K		K	K	
quantity_per_assembly	X			X	
item_category_code	P		X	X	
essentiality_code	X				
source_maintenance_recoverability_code	X			X	
maintenance_replacement_rate_i	X			X	
indenture_code				X	
hardness_critical_item				X	
remain_in_place_indicator				X	
recommended_minimum_system_stock_level				X	
organizational_maintenance_task_distribution				X	
intermediate_direct_support_maintenance_task_distribution				X	
intermediate_general_support_maintenance_task_distribution				X	

FIGURE 10 - MAINTENANCE PLANNING REPORT MATRIX (CONTINUED)

Figure 10 Logistics Product Data Products for Maintenance Planning	PMAC	MAC LSA-004	Task Analysis LSA-019	Maint Plan LSA-024	PMCS
special_repair_activity_maintenance_task_distribution				X	
depot_shipyard_maintenance_task_distribution				X	
condemned_below_depot_maintenance_task_distribution				X	
condemned_at_depot_maintenance_task_distribution				X	
organizational_repair_cycle_time				P	
intermediate_direct_support_repair_cycle_time				P	
intermediate_general_support_repair_cycle_time				P	
special_repair_activity_repair_cycle_time				P	
depot_shipyard_repair_cycle_time				P	
contractor_repair_cycle_time				P	
				P	
HGA Entity			P		
HH Entity				K	
overhaul_replacement_rate_quantity				X	
overhaul_replacement_indicator				X	
HP Entity				K	
interchangeability_code				A	

FIGURE 10 - MAINTENANCE PLANNING REPORT MATRIX (CONTINUED)

4.1.3 Support and Test Equipment

These products provide data necessary to register, or verify the registry of, the support or test equipment in the requiring authority's/customer's inventory or provide detailed recommendations regarding the use of existing or new support equipment. They provide details of the Test Measurement and Diagnostic Equipment (TMDE) calibration procedures, technical parameters, and any piece of support equipment needed to support the required support equipment. [Figure 11](#) provides a matrix of the data elements required to produce support and test equipment products, such as, Support Equipment List, Support Equipment Recommendation Data (SERD), TMDE Requirements, and Calibration Maintenance Requirements Summary (CMRS).

Figure 11 Logistics Product Data Products for Support & Test Equipment	Spt. Equip List LSA-071	SERD LSA-070	TMDE Rqts. LSA-072	CMRS LSA-076
XA Entity	All Keys	All Keys	All Keys	All Keys
XB Entity	K	K	K	K
logistics_support_analysis_control_number_ nomenclature	X	X	X	X
technical_manual_functional_group_code		X		
XC Entity	K	K	K	K
system_end_item_item_designator_code		X		
XF Entity	Process all Elements		Process all Elements	Process all Elements
XG Entity	Process all Elements		Process all Elements	Process all Elements
XH Entity	All Elements	All Keys	All Keys	All Keys
AG Entity		K		K
required_technical_mean_time_between_failures				X
BA Entity		K		K
conversion_factor		X		
BD Entity		K		K
maximum_time_to_repair				
mean_time_between_failure_technical_measurement_ base		X		

FIGURE 11 - SUPPORT AND TEST EQUIPMENT PRODUCT MATRIX

Figure 11 Logistics Product Data Products for Support & Test Equipment	Spt. Equip List LSA-071	SERD LSA-070	TMDE Rqts. LSA-072	CMRS LSA-076
mean_time_between_failures_operational				X
mean_time_between_failures_technical		X		X
CA Entity	K	All Keys	All Keys	K
annual_operating_requirement_logistics_support_analysis_control_number				P
annual_operating_requirement_alternate_logistics_support_analysis_control_number				P
annual_operating_requirement_logistics_support_analysis_control_number_type				P
task_identification	X			
measured_mean_elapsed_time				X
CB Entity			All Elements	
CG Entity	Process all Keys	K	K	
EA Entity	K	K	K	K
support_equipment_item_category_code	P	X		X
support_equipment_full_item_name			X	
acquisition_decision_office		X		
end_article_item_designator		X		
date_of_first_article_delivery		X	X	
calibration_interval			X	X
calibration_measurement_requirement_summary_recommended		X		
calibration_standard		X		
calibration_time			X	
calibration_item		X		
calibration_required		X	X	X
support_equipment_contract_number		X		
contractor_furnished_equipment_government_furnished		X		
custody_code		X		
government_designator		X		
hardware_development_price		X		
integrated_logistics_support_price		X		
design_data_price		X		
extended_unit_price			X	

FIGURE 11 - SUPPORT AND TEST EQUIPMENT PRODUCT MATRIX (CONTINUED)

Figure 11 Logistics Product Data Products for Support & Test Equipment	Spt. Equip List LSA-071	SERD LSA-070	TMDE Rqts. LSA-072	CMRS LSA-076
pass_thru_price		X		
recurring_cost		X		
support_equipment_cost_price_currency_code		X	X	
life_cycle_status			X	
logistics_control_code			X	
logistics_decision_office		X		
managing_command_agency			X	
management_plan		X		
mobile_facility_code		X		
operating_height		X	X	
operating_length		X	X	
operating_weight		X	X	
operating_width		X	X	
operating_dimensions_unit_of_measure		X	X	
operating_weight_unit_of_measure		X	X	
support_equipment_source_maintenance_recoverability_code	X	X		
technical_manual_required_code		X		
preparing_activity		X		
program_element		X		
program_support_inventory_control_point		X		
revolving_assets		X		
support_equipment_required		X		
support_equipment_service_designator		X		
using_service_designator_code		X		
sketch		X		
spare_factor		X		
special_management_code		X		
standard_interservice_agency_serial_control_number		X		
storage_dimensions_unit_of_measure		X		
storage_height		X		
storage_length		X		
storage_weight		X		
storage_weight_unit_of_measure		X		
support_equipment_mean_time_between_failures			X	X
support_equipment_mean_time_to_repair			X	
support_equipment_repair_operations_maintenance_level			X	
operators_manual			X	
skill_specialty_code_for_support_equipment_operator			X	
self_test_code			X	
storage_width		X		

FIGURE 11 - SUPPORT AND TEST EQUIPMENT PRODUCT MATRIX (CONTINUED)

Figure 11 Logistics Product Data Products for Support & Test Equipment	Spt. Equip List LSA-071	SERD LSA-070	TMDE Rqts. LSA-072	CMRS LSA-076
support_equipment_shipping_dimensions_unit_of_measure		X		
support_equipment_shipping_height		X		
support_equipment_shipping_length		X		
support_equipment_shipping_weight		X		
support_equipment_shipping_weight_unit_of_measure		X		
support_equipment_shipping_width		X		
technical_evaluation_priority_code		X		
type_equipment_code		X		
test_measurement_and_diagnostic_equipment_register_code			X	
test_measurement_and_diagnostic_equipment_register_index_number			X	
type_classification			X	
printed_circuit_board_repair_operations_main_level				X
support_equipment_calibration_operations_main_level				X
support_equipment_repair_operations_maintenance_level				X
operators_manual				X
year_of_fielding		X		
support_equipment_functional_analysis_narrative	X	X	X	
support_equipment_description_and_function_narrative		X	X	
support_equipment_nonproliferation_effort_narrative		X	X	
support_equipment_characteristics_narrative		X	X	
support_equipment_installation_factors_or_other_facilities_narrative		X	X	
support_equipment_additional_skills_and_special_training_requirements_narrative		X	X	
support_equipment_explanation_narrative		X	X	
support_equipment_justification_narrative		X	X	
EB Entity		All Elements		
EC Entity		K	K	K
support_equipment_parameter			X	X
support_equipment_parameter_accuracy			X	X
support_equipment_parameter_range_from			X	X
support_equipment_parameter_range_to			X	X
support_equipment_parameter_input_output_code			X	X
support_equipment_parameter_range_or_value_code			X	X

FIGURE 11 - SUPPORT AND TEST EQUIPMENT PRODUCT MATRIX (CONTINUED)

Figure 11 Logistics Product Data Products for Support & Test Equipment	Spt. Equip List LSA-071	SERD LSA-070	TMDE Rqts. LSA-072	CMRS LSA-076
ED Entity		All Elements	K	
number_of_activities			C	
support_equipment_quantity_per_activity			C	
EF Entity		K		All Keys
support_equipment_recommendation_ data_date_of_initial_submission		X		
support_equipment_recommendation_ data_date_of_revision_submission		X		
support_equipment_recommendation_data_ revision_remarks		X		
support_equipment_recommendation_data_status		X		
EH Entity		All Elements		
EI Entity			All Elements	
EJ Entity		All Elements		
EK Entity		All Elements	All Keys	
EL Entity		All Elements		
EM Entity		All Elements		
UA Entity		All Elements	K	All Keys
unit_under_test_explanation			X	
UB Entity		All Elements	All Keys	K
unit_under_test_calibration_measurement_ requirement_recommended_code				P

FIGURE 11 - SUPPORT AND TEST EQUIPMENT PRODUCT MATRIX (CONTINUED)

Figure 11 Logistics Product Data Products for Support & Test Equipment	Spt. Equip List LSA-071	SERD LSA-070	TMDE Rqts. LSA-072	CMRS LSA-076
UC Entity		All Elements	K	
operational_test_program_apportioned_unit_cost_recurring			X	
operational_test_program_apportioned_unit_cost_nonrecurring			X	
operational_test_program_coordinated_test_plan			X	
operational_test_program_apportioned_unit_cost_nonrecurring_recurring_currency_code			X	
UD Entity		Process All Elements	Process All Elements	
UE Entity		All Elements		
UG Entity		All Elements	All Keys	
UH Entity		All Elements		
UI Entity		All Elements	K	
adapter_interconnector_device_apportioned_unit_cost_recurring			X	
adapter_interconnector_device_apportioned_unit_cost_nonrecurring			X	
adapter_interconnector_device_apportioned_unit_cost_nonrecurring_recurring_currency_code			X	
UJ Entity		Process all Elements		
UK Entity		All Elements		
UL Entity		Process all Elements		
UM Entity				All Keys

FIGURE 11 - SUPPORT AND TEST EQUIPMENT PRODUCT MATRIX (CONTINUED)

Figure 11 Logistics Product Data Products for Support & Test Equipment	Spt. Equip List LSA-071	SERD LSA-070	TMDE Rqts. LSA-072	CMRS LSA-076
UN Entity				K
support_equipment_unit_under_test_calibrations_ measurement_requirements_summary_parameter_code				P
support_equipment_unit_under_test_ parameter_accuracy				X
support_equipment_unit_under_test_ parameter_input_output_code				X
support_equipment_unit_under_test_parameter				X
support_equipment_unit_under_test_ parameter_range_from				X
support_equipment_unit_under_test_ parameter_range_to				X
support_equipment_unit_under_test_ parameter_range_value_code				X
HA entity	K	K	K	K
item_name	X	X	X	X
national_stock_number_federal_supply_classification	X	X	X	
national_stock_number_national_item_identification_ number	X	X	X	
national_stock_number_activity_code	X	X	X	
national_stock_number_cognizance_code	X	X	X	
national_stock_number_materiel_control_code	X	X	X	
national_stock_number_special_materiel_identification_ code materiel_management_aggregation_code	X	X	X	
production_lead_time		X		
contractor_technical_information_code		X		
line_item_number			X	
HB Entity		All Elements		
HD Entity	K	K	K	
price_provisioning	X	P	P	
unit_price		X	X	
currency_code	X	X	X	
HG Entity	K	K	All Keys	All Keys
item_category_code	X			
source_maintenance_recoverability_code		X		
work_unit_code		X		

FIGURE 11 - SUPPORT AND TEST EQUIPMENT PRODUCT MATRIX (CONTINUED)

4.1.4 Supply Support

These products provide the requiring authority/customer with information on static and application-related hardware information that may be used to determine initial requirements and cataloging of support items to be procured through the provisioning process. These products may include the identification of the system breakdown, maintenance coding, maintenance replacement factors, overhaul rates, roll-up quantities, design change information, and associated parts manuals, as applicable. The products may show information on different categories of provisional items such as long lead items, bulk items, tools and test equipment, etc. [Figure 12](#) provides a matrix of data elements required to produce supply support products, such as, support item lists, Indentured Parts Lists (IPL), Defense Logistics Information Service (DLIS) Screening, Provisioning Technical Documentation (PTD), Authorization List Items, Bill of Materials (BOM) List, and hazardous materials reporting.

Figure 12 Logistics Product Data Products for Supply Support	Spt Items List LSA-009	IPL LSA- 030	Screening LSA-032	PTD LSA- 036	Auth. Items LSA- 040	BOM LSA- 080	Hazardous Materials LSA-078
XA Entity	All Keys	All Keys	All Keys		All Keys	K	All Keys
logistics_support_analysis_ control_number structure						X	
XB Entity	All Keys	All Keys	All Keys			K	All Keys
logistics_support_analysis_ control_number_indenture code						X	
XC Entity	All Keys	K	K	K	K	K	All Keys
system_end_item_provisioning_c ontract_control_number	X	X	X	X	X	X	
usable_on_code	X	X	X	X	X	X	
system_end_item_provisioning_ list_item_sequence_number		X	X	X		X	
system_end_item_ quantity_per_assembly	X	X		X		X	
system_end_item_quantity_per_ end_item	X		X	X	X		
system_type_of_change_code				X		X	
XD Entity				K			
Serial_number_usable_on_code				X			
XF Entity							All Keys
XG Entity							All Keys

FIGURE 12 - SUPPLY SUPPORT PRODUCT MATRIX

Figure 12 Logistics Product Data Products for Supply Support	Spt Items List LSA-009	IPL LSA- 030	Screening LSA-032	PTD LSA- 036	Auth. Items LSA- 040	BOM LSA- 080	Hazardous Materials LSA-078
XH Entity	K	All Keys	All Keys	All Keys	K	All Keys	K
commercial_and_government_entity_name					X		
commercial_and_government_entity_street					X		
commercial_and_government_entity_city					X		
commercial_and_government_entity_state					X		
commercial_and_government_entity_nation					X		
commercial_and_government_entity_postal zone					X		
XI Entity		K			K		
technical_manual_number		X			X		
CA Entity							K
referenced_end_item_acronym_code							P
referenced_logistics_support_analysis_control_number							P
referenced_alternate_logistics_support_analysis_control_number							P
referenced_logistics_support_analysis_control_number_type							P
referenced_task_code							P
annual_operating_requirement_logistics_support_analysis_control_number							P
annual_operating_requirement_alternate_logistics_support_analysis_control_number							P
annual_operating_requirement_logistics_support_analysis_control_number_type							P
task_annual_operating_requirements_measurement_base							P
referenced_task_code							P

FIGURE 12 - SUPPLY SUPPORT PRODUCT MATRIX (CONTINUED)

Figure 12 Logistics Product Data Products for Supply Support	Spt Items List LSA-009	IPL LSA- 030	Screening LSA-032	PTD LSA- 036	Auth. Items LSA- 040	BOM LSA- 080	Hazardous Materials LSA-078
task_annual_operating_requirements							X
task_identification							X
task_frequency							X
CI Entity							All elements
HA Entity	K	K	K	K	K	K	K
item_name	X	X	X	X	X	X	X
item_name_code				X			
reference_number_category_code			X	X			
reference_number_variation_code			X	X			
defense_logistics_information_service_screening_requirement_code			P				
document_identifier_code			P				
national_stock_number_federal_supply_classification	X	X		X	X		
document_availability_code				X			
acquisition_method_code				X			
acquisition_method_suffix_code				X			
contractor_technical_information_code				X			
unit_of_measure	X			X	X		X
unit_of_issue				X	X		
national_stock_number_national_item_identification_number	X	X		X	X		
tools_and_test_equipment_list		X		X			
item_management_code				X			
national_stock_number_cognizance_code				X			
national_stock_number_special_material_identification_code_materiel_management_aggregation_code				X			
national_stock_number_materiel_control_code				X			
national_stock_number_activity_code				X			
unit_of_issue_conversion_factor				X			
shelf_life	X			X			
shelf_life_action_code				X			
program_parts_selection_list				X			

FIGURE 12 - SUPPLY SUPPORT PRODUCT MATRIX (CONTINUED)

Figure 12 Logistics Product Data Products for Supply Support	Spt Items List LSA-009	IPL LSA- 030	Screening LSA-032	PTD LSA- 036	Auth. Items LSA- 040	BOM LSA- 080	Hazardous Materials LSA-078
production_lead_time	X			X			
special_material_content_code	X			X			
special_maintenance_item_code	X			X			
criticality_code				X			
precious_metal_indicator_code				X			
government_furnished_item_list				X			
interim_support_items_list				X			
long_lead_time_item_list				X			
common_and_bulk_item_list				X			
repairable_items_list				X			
interim_released_item_list				X			
installation_and_checkout_item_list				X			
authorization_stock_list				X			
recommended_buy_list_item_list				X			
prescribed_load_list_item_list				X			
system_support_package_component_list				X			
physical_security_pilferage_code	X			X			
automatic_data_processing_equipment_code				X			
demilitarization_code				X			
material				X			
hazardous_materials_storage_cost							X
hazardous_waste_disposal_cost							X
hazardous_waste_storage_cost							X
hazardous_waste_cost_currency_code							X
HB Entity			K	K			
additional_reference_number_reference_number_category_code			X	X			
additional_reference_number_reference_number_variation_code			X	X			
HC Entity							

FIGURE 12 - SUPPLY SUPPORT PRODUCT MATRIX (CONTINUED)