



DoD MANUAL 4140.01, VOLUME 7

DoD SUPPLY CHAIN MATERIEL MANAGEMENT PROCEDURES: SUPPORTING TECHNOLOGIES

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Purpose: This manual is composed of several volumes, each containing its own purpose.

- In accordance with the authority in DoD Directive 5134.01; the July 13, 2018 Deputy Secretary of Defense Memorandum; and DoD Instruction (DoDI) 4140.01, this manual:
 - Implements policy, assigns responsibilities, and provides procedures for DoD materiel managers and others who work within or with the DoD supply system.
 - Establishes standard terminology for use in DoD supply chain materiel management.
- This volume prescribes procedures for supporting DoD supply chain materiel management with logistics technology.

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SECTION 1: GENERAL ISSUANCE INFORMATION

1.1. APPLICABILITY. This volume applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this issuance as the “DoD Components”).

SECTION 2: RESPONSIBILITIES

2.1. ASSISTANT SECRETARY OF DEFENSE FOR SUSTAINMENT. Under the authority, direction, and control of the Under Secretary of Defense for Acquisition and Sustainment, the Assistant Secretary of Defense for Sustainment supports the development and application of advances in logistics technology that strengthen the capabilities of the DoD supply chain.

2.2. DoD COMPONENT HEADS. The DoD Component heads:

- a. Implement the procedures prescribed in this volume and ensure that supplemental guidance and procedures are in accordance with DoDI 4140.01 and this volume.
- b. Implement advances in logistics technologies to maintain efficient and effective materiel management systems.
- c. Develop and execute a supply chain data management strategy that promotes the use of shared enterprise services, including common shared data, common interfaces with data systems, and shared data services, wherever possible.
- d. Use automatic identification technology (AIT) in all logistics processes, wherever possible.
- e. Evaluate the size and resource requirements necessary to develop and improve the logistics enterprise to meet DoD supply chain performance goals.
- f. Use product support data to ensure life-cycle sustainment and continuous improvement of product affordability, reliability, security, and supportability.

SECTION 3: DOD SUPPLY CHAIN MATERIEL MANAGEMENT SYSTEMS

3.1. REQUIREMENTS FOR MODERN TECHNOLOGIES. To ensure a high-performing and agile supply chain, DoD Components will incorporate advances in logistics technologies into DoD materiel management to handle materiel management information, automatically identify items in storage and in transit, and analyze process improvements. The DoD Components will:

a. Implement and maintain modern logistics information systems and technologies and adopt new methods that have been proven through cost benefit or other analysis, such as unique item identification, to manage information to:

(1) Provide a timely and complete process that satisfies DoD supply chain materiel management requirements.

(2) Coordinate planning and provide for a collaborative and interoperable environment among the DoD Components as well as with commercial partners and suppliers.

(3) Tailor support to operational conditions and mission requirements.

(4) Sustain support while minimizing systems support costs and duplicative efforts.

b. Design DoD supply chain management (SCM) information systems to facilitate DoD-wide asset visibility of materiel throughout the DoD supply chain. These systems will:

(1) Use AIT to aid in managing costs, maintaining accountability and control, and implementing the policies and procedures established in DoDI 4140.01.

(2) Provide timely access to accurate, actionable information across logistics processes to enable responsive, protected logistics situational awareness and execution.

c. Modernize SCM systems to improve performance, reduce cost, enhance awareness of supply chain risks, and increase ability to mitigate supply chain risk.

d. Evaluate all modernization initiatives to ensure they will achieve measureable improvements in the operational performance in the DoD supply chain and not merely represent newer technological capabilities.

e. Use data standards to ensure DoD enterprise automated information systems and enabling technologies are interoperable.

f. Use internal controls to ensure the data used to monitor supply chain performance is both accurate and secure.

g. Use AIT to assist in property accountability unless doing so would not be practicable, as is demonstrably proven through cost benefit or other analysis. Document decisions on courses of action for AIT implementation, to include those that are determined not to be practicable, with a memorandum of record signed by activity commanders, commanding officers, or officers in

charge and make the documentation available upon request (e.g., audit). Review, re-evaluate, re-affirm, and document AIT implementation decisions, to include the rejected AIT proposals, every two years.

3.2. INFORMATION AND MANAGEMENT SYSTEMS REQUIREMENTS.

a. With regard to information management, the DoD Components will:

- (1) Assign data ownership, including responsibility for ensuring data integrity.
- (2) Implement an information exchange network to support coordination and collaboration between DoD supply chain functions and activities, including commercial partners.
- (3) Incorporate security mechanisms to provide for secure, uncompromised information exchange in accordance with Enclosure 14 of DoDI 5000.02, Volume 4 of DoD Manual 5200.01, DoDI 5200.44, DoDI 8500.01, and DoDI 8582.01, where applicable.
- (4) Adopt commercial data exchange and user interface standards and procedures, including Defense Logistics Management Standards. Maintain interoperability and appropriate management of access to, and use of, the system and system resources.
- (5) Ensure information required by supply chain participants is available to eliminate duplicate records and for reconciliation.
- (6) Update data elements in real time or near real time as change occurs or new information becomes available.
- (7) Fully participate in developing and implementing DoD Information Network Enterprise Services to support the DoD supply chain with the capability to:
 - (a) Allow authorized users to access information from any location transparently and independent of any process application.
 - (b) Provide functional applications online.
 - (c) Automate application-driven data calls and facilitate machine-to-machine data sharing through common interfaces.
 - (d) Provide timely and accurate data access.
 - (e) Incorporate common operating environment software to minimize the impact on other applications.
 - (f) Ensure information integrity in a secure network that restricts access to authorized individuals and activities.
 - (g) Use authoritative data sources.

(h) Assess threats, including threats from existing and potential suppliers providing critical supply chain information and communications technology components, in accordance with DoDI 5200.44 and Volume 11 of this manual.

(8) Use DoD-wide sources of data, such as wide area workflow delivery transactions, to enhance data utilization and streamline business processes.

b. With regard to automated materiel management systems, the DoD Components will:

(1) Adopt a strategy of using commercial off-the-shelf SCM applications based on an overarching enterprise framework with common interfaces and common data plans whenever such applications meet their mission requirements.

(2) Use enterprise resource planning or equivalent strategies to increase supply chain effectiveness and productivity.

(3) Establish and maintain inter-DoD Component SCM interface requirements and interoperable data standards to reduce redundancy for all systems development.

(4) Ensure their materiel management systems collect and disseminate performance measures and cost metrics pertaining to all organizational levels.

(5) Ensure their materiel management systems interface with DoD Component planning, programming, budgeting, and execution system processes to permit cross-referencing and analysis of resource requirements and availability.

(6) Provide automated access to computer-based standard training and learning tools for supply chain managers.

c. With regard to internal controls of data, the DoD Components will:

(1) Record data sources and data ownership for data used to compute key performance indicators, and update these data sources when changes occur.

(2) Annually review data quality documentation for accuracy, to include data dictionary or descriptions of data, data system requirements documents, procedures manual, and system flow charts.

(3) Develop and apply methods to validate the quality of data used to compute key performance indicators during each reporting period. Establish a capability to assess the level of the data's quality against the required level of quality to be useful for monitoring performance.

(a) Areas of quality that the DoD Components assess may include accuracy, completeness, timeliness, consistency, uniqueness, and validity.

(b) Methods for validation include document analysis, direct observation, sampling, and simulation.

(4) Identify and evaluate data limitations. Data limitations may include lagging data, incomplete data, and inconsistent data definitions or collection. Determine actions to compensate or correct for data limitations for data used in decision making. Update data limitations and actions when changes occur.

(a) Lagging data is adequate for historical analysis but not adequate for real-time decisions, for example when data is available six months after collection.

(b) Incomplete data may skew results because the total population is not included; for example when a DoD-wide metric is lacking input from one or more DoD Components.

(c) Inconsistent data definitions or collection may result in different measurements that could impact trends, anomalies, or the impact of metrics. For example, an inconsistency occurs when a reporting unit automatically adds three days to a cycle measurement to represent an unmeasured portion of a cycle while another reporting unit does not add additional days for the same cycle measurement.

(5) Review whether internal controls are adequate to counter potential supply chain failure risks that may result from inaccurate data and erroneous decision making. Consider the costs and benefits of internal controls, for example:

(a) Personnel costs for recording data sources and procedures, conducting data assessments, and identifying and mitigating data limitations; and costs incurred due to the time lag in reporting to accommodate data quality controls.

(b) Improved decision making that deploys resources more efficiently, lowers risk, complies with federal policies, reduces time reconciling data for analysis, and lowers personnel costs for researching anomalies and errors.

(6) Develop and apply methods to assess the reliability of data-system-processed data used to compute key performance indicators. Establish a data reliability assessment to be performed every five years or when a new data system for sourcing is deployed. The following guidelines apply:

(a) The assessment will evaluate the risk of using the data. Data used to compute metrics that will inform legislation, policy, or programs with substantial effects are high risk and require more rigorous assessment.

(b) Areas the DoD Components assess may include accuracy, completeness, timeliness, consistency, uniqueness, and validity.

(c) Methods for assessment include, document analysis tracing to source documents, interviewing contacts involved in data entry and handling, data testing, and checking selected system controls.

(d) The DoD Components will retain documentation of the most recent data reliability assessment, including results of tests and evaluations of data systems. This documentation will summarize the final determination of reliability. If the data is sufficiently

reliable, DoD Components will record the data limitations. If the data is not sufficiently reliable, DoD Components will describe alternatives or a correction plan to achieve reliability.

SECTION 4: AIT

4.1. AIT REQUIREMENTS. The DoD Components will:

- a. Incorporate and maximize the use of machine-readable AIT media and data capture devices in DoD supply chain business processes.
- b. Ensure information about materiel entering and moving through the DoD supply chain is in a format that is applicable for use by military and commercial AIT devices.
- c. Mark appropriate individual item assets in accordance with the DoD item unique identification (IUID) program procedures in Volume 9 of this manual. Establish a capability to read the unique item identifier (UII) mark (an error correction code (ECC) 200 data matrix symbol) in accordance with the IUID policy and UII standards.

4.2. AIT STANDARDS. The DoD Components will:

- a. Use DoD-approved standards and specifications for AIT media, devices, and software in the DoD Information Technology Standards Registry.
- b. Only use AIT devices that conform to the International Organization for Standardization and the International Electrotechnical Commission (ISO/IEC) 15434 and ISO/IEC 15418 standards or other standard subsequently approved and indexed in the DoD Information Technology Standards Registry.
- c. Use DoD-approved data syntax and semantics for all high-capacity AIT devices (e.g., two-dimensional bar codes, active and passive radio frequency identification (RFID) tags, and cellular or satellite tracking devices).
- d. For IUID program UII marking, use:
 - (1) The ECC 200 data matrix symbol standards in Volume 9 of this manual and ISO/IEC 16022.
 - (2) ISO/IEC 16022 standards for:
 - (a) Information technology, automatic identification, and data capture techniques.
 - (b) Data matrix bar code symbology specification.
 - (3) ISO/IEC 15415 standards for:
 - (a) Information technology.
 - (b) Automatic identification and data capture techniques.
 - (c) Bar code symbol print quality test specification.

- (d) Two-dimensional symbols.
- e. Use ISO/IEC 18000-7 air interface protocol standard or other standards subsequently approved and indexed in the DoD Information Technology Standards Registry for active RFID collection systems.
- f. Conform passive RFID collection systems, including the specification for electronic product code (EPC), to the ISO/IEC 18000-6 standard for:
 - (1) Information technology.
 - (2) RFID for item management.
 - (3) Parameters for air interface communications at 860 megahertz (MHz) to 960 MHz.
- g. Use the standards developed by GS1 to:
 - (1) Ensure AIT media, devices, and software interoperability within DoD and with industry.
 - (2) Improve efficiency and visibility in global supply chains with the use of RFID and the EPC.
- h. Conform radio frequency local area network AIT devices to the standards in the Institute of Electrical and Electronics Engineers 802.11 series of standards and Federal Information Processing Standards Publication 140-2.
- i. Follow detailed barcode, RFID, and other AIT media procedures in Military Standard MIL-STD-129 and Parts II and III of the Defense Transportation Regulation 4500.9-R.
- j. Ensure sufficient AIT infrastructure and equipment are appropriately positioned to support Combatant Commanders' asset visibility requirements. Instrument military and commercial ports with fixed or mobile AIT capability based on volume of activity and duration of the requirement.
- k. Forward data from all DoD Component-operated cargo tracking devices to the radio frequency-in-transit visibility system server tracking portal maintained by the Army Program Executive Officer, Enterprise Information Systems, Automated Movement and Identification Solutions.

SECTION 5: DoD SCM ANALYTICAL CAPABILITIES

5.1. SUPPORT TO MATERIEL MANAGEMENT PROCESSES AND DECISION MAKING.

a. To improve their materiel management processes and decision-making in accordance with the metrics used to monitor supply chain performance described in Volume 10 of this manual, the DoD Components can develop (or otherwise acquire) and use SCM analytical capabilities to:

- (1) Determine which items should be stocked and what maximum limits should be placed on the retention of assets versus the disposal of assets.
- (2) Forecast demand, procurement lead times, and repair lead times using historical data as well as data from information exchanges and collaboration.
- (3) Set inventory levels with the objective of either:
 - (a) Meeting a performance goal at the least cost;
 - (b) Getting the best performance for a given budget; or
 - (c) Satisfying a time-phased demand plan at the least cost while preventing backorders against stock.
- (4) Optimize stock positioning and re-positioning decisions.
- (5) Compute and validate procurement or repair replenishment requirements, including life-of-type buys and contract modifications.
- (6) Warehouse, query, view, and analyze materiel management data to support logisticians' business information needs and situational awareness, whether at the strategic, operational, or tactical level.
- (7) Identify the root cause of problems in DoD supply chain performance by identifying and tracking:
 - (a) Deviations from established or projected goals for recognized DoD supply chain performance metrics.
 - (b) Deviations from normal historical or projected patterns in such areas as demand, stock levels, lead times, repair cycles, order and ship times, retention stocks, or prices of materiel or services.
- (8) Assess costs to acquire, manage, and maintain materiel inventories and costs associated with DoD supply chain operations, and analyze cost changes.

(9) Simulate proposed process changes in materiel management, including coding changes to automated systems, or changes in force structure or operations to project their impact on DoD supply chain performance and costs.

(10) Use readiness-based sparing (RBS) tools to:

(a) Plan for materiel support to contingency and wartime operations.

(b) Assess reliability, maintainability, or supportability improvements' impact on weapon system readiness.

(11) Predict and prevent, where possible, materiel shortfalls to operations or maintenance programs.

(12) Analyze customer behavior to improve DoD supply chain support by materiel providers.

(13) Use continual process improvement methods to assess, develop, and support total life-cycle management processes, initiatives, and emerging information systems.

b. Although established models and techniques are preferable for reasons of quality and validity, the DoD Components are not limited to the models or techniques that they may use to develop analytical capabilities. All models and techniques used, however, must produce repeatable and verifiable results.

5.2. DEVELOPMENT AND OUTPUTS.

a. In developing analytical capabilities, the DoD Components will:

(1) Use existing information sources, including:

(a) Internal materiel management systems, maintenance information systems, existing data repositories (e.g., the Logistics Metrics Analysis Reporting System), operational systems tracking weapon system performance, and the product data repositories cited in Section 6 of this issuance.

(b) External commercial repositories of supply chain benchmarks and metrics.

(2) Train employees to use RBS tools, simulation models, mathematical algorithms, expert systems, artificial intelligence techniques, spreadsheets, statistical packages, data mining packages, and statistical sampling.

(3) Use commercial analytical, simulation, statistical, or business intelligence packages where those packages satisfy the specific needs of the DoD Component.

b. The DoD Components use the analytical outputs, where appropriate, to:

(1) Deliver supply chain information to senior management using dashboards and other visualizations of data such as tables and graphics.

(2) Support demand and supply planning and stockage decisions, such as optimized stockage quantities, procurement quantities, and repair quantities.

(3) Project costs for future materiel management operations or proposed alternatives.

(4) Summarize key trends, identify and alert managers of out-of-tolerance conditions, project materiel shortfalls, and highlight other anomalies associated with basic performance or process sizing metrics documenting in information exchange programs such as:

(a) The Government Information Data Exchange Program.

(b) The Product Data Reporting and Evaluation Program Product Quality Deficiency Reporting System.

(5) Track actual resource use by weapon system, equipment, or supply chain activity and assess reallocation of available resources by weapon system based on changes in priorities and conditions.

(6) Forecast readiness trends by weapon system, end equipment, or organization. Potential basis for forecasting trends may include, but are not limited to, current readiness posture or the potential changes to projected failures, commanders' future operational plans, and projected acquisition or maintenance production. Develop estimated dates for correcting projected deficiencies.

(7) Develop material requirements planning information related to end-to-end stock positioning and movement. Address movement planning information from storage activity to the customer or to a theater and then from theater reception, staging, onward movement, and to unit reception and includes applicable force integration capacity and constraints.

(8) Evaluate "what if" scenarios based on forecasts in readiness trends, e.g., impacts on readiness of weapon systems, end items, or organization.

SECTION 6: PRODUCT SUPPORT DATA

6.1. REQUIREMENT TO COLLECT AND MAINTAIN PRODUCT SUPPORT DATA.

a. Each DoD Component, or the DoD Component's designated third party with guaranteed access to product support data, will collect and maintain product support data for:

(1) Weapon system and equipment program configuration and performance data and technical manuals.

(2) Weapon system reparable item test, failure, and usage data and repair manuals.

(3) Weapon system item support cost data.

(4) Expected system life.

(5) Other data related to the effective management and control of parts, items, equipment, and assets.

b. DoD Components will:

(1) Manage product support data that supplements item identification or catalog data in accordance with Volume 9 of this manual.

(2) Retain product support data in a manner consistent with the product support strategy developed during the weapon system, equipment, or reparable component acquisition phase and life cycle.

(3) Select product support data that are required to support the valuation of equipment assets.

(4) Request expected system's planned lifecycle as needed to support the value assigned in a financial statement audit.

c. For acquisition category I and II programs, as described in DoDI 5000.02, regardless of the planned sustainment approach, the DoD Components will:

(1) Adopt acquisition strategies that provide for the technical data rights needed to sustain such systems and subsystems over the life cycle.

(2) Acquire and retain rights to technical data in accordance with the program manager's data management strategy.

d. Product support data users should have online access to product support data, regardless of the geographical location of that data.

e. To warehouse product support data where necessary, the DoD Components will:

(1) Provide for data repositories, data management systems, and related access capabilities.

(2) Control the data management system technical baseline for weapon systems and other equipment (e.g., controlled technical information consistent with Subpart 252.204-7012 of the Defense Federal Acquisition Regulation Supplement, configuration documentation, technical data, and technical manuals).

(3) Update expected system life as required.

(4) Update configuration data as required and include all reparable and consumable items identified by the program manager.

6.2. ACCESS TO PRODUCT SUPPORT DATA.

a. When requested by another DoD Component, to the extent consistent with any applicable technical data licensing restrictions, the DoD Components should provide access to product data for:

(1) Weapon system program and force structure information, in a secured mode.

(2) Technical and repair manuals, preferably through the use of integrated electronic technical manuals, to promote a flow of information among weapon systems managers and their suppliers, maintainers, and customers.

(3) Current component maintenance data to enable comparative analyses between actual and projected failure rates and reliability performance.

(4) Engineering drawings and related maintenance procedures, maintenance planning data, maintenance resources, provisioning data, and field feedback data.

(5) Engineering change proposals for supply chain impact and coordination implementation and use of technical documentation.

(6) Financial audit support.

b. The DoD Components will:

(1) Provide the capability to exchange product support information with U.S. allies to enhance international interoperability and cooperate.

(2) Include safeguards in the capability or exchange process to ensure transfers of product support information to international partners are consistent with DoD policy for international transfers of technology, articles, and services in accordance with DoDI 2040.02.

GLOSSARY

G.1. ACRONYMS.

AIT	automatic identification technology
DoDI	DoD instruction
ECC	error correction code
EPC	electronic product code
ISO/IEC	International Organization for Standardization and the International Electrotechnical Commission
IUID	item unique identification
MHz	megahertz
RBS	readiness-based sparing
RFID	radio frequency identification
SCM	supply chain management
UII	unique item identifier

G.2. DEFINITIONS. These terms and their definitions are for the purpose of this issuance.

active RFID tag. A radio frequency tag device that has the ability to produce its own radio signal not derived from an external radio source. Active RFID tags may hold relatively large amounts of data, are continuously powered, and are normally used when a longer tag read distance is desired.

AIT.

A suite of technologies enabling the automatic capture of data, thereby enhancing the ability to identify, track, document, and control assets (e.g., materiel), and deploying and redeploying forces, equipment, personnel, and sustainment cargo.

AIT encompasses a variety of data storage or carrier technologies such as linear bar codes, two-dimensional symbols (e.g., stacked linear barcode symbol format Portable Data File 417 and Data Matrix), magnetic strips, integrated circuit cards, cellular or satellite tracking transponders, and RFID tags that are used for marking or tagging individual items, equipment, air pallets, or containers.

The process of capturing data using AIT devices is referred to commercially as “automatic identification and data capture.”

controlled technical information. Technical information that is subject to controls on the access, use, reproduction, modification, performance, display, release, disclosure, or dissemination of that information. The term does not include information concerning general scientific, mathematics, or engineering principles commonly taught in schools, colleges, and universities or information in the public domain.

demand. An indication of a requirement, a requisition, or similar request for an item of supply or individual item. Demands are categorized as either recurring or non-recurring.

DoD Information Network. The globally interconnected, end-to-end set of information capabilities, associated processes, and personnel for collecting, processing, storing, disseminating, and managing information on demand to warfighters, policy makers, and support personnel. The DoD Information Network includes owned and leased communications and computing systems and services, software (including applications), data, security services, other associated services, and national security systems.

DoD Information Network Enterprise Services. The core enterprise services for the net-centric capabilities provided by the Defense Information Systems Agency.

EPC.

A product numbering scheme that can provide unique identification for physical objects, assemblies, and systems. Information is not stored directly within the code; rather, the code serves as a reference for networked (or internet-based) information. The EPC is considered an extended form of the existing Universal Product Code or European Article Number, currently used by manufacturers to identify products.

The standardized EPC data consists of an EPC (or EPC identifier) that uniquely identifies an individual object, as well as an optional filter value when judged to be necessary to enable effective and efficient reading of the EPC tags. In addition to this standardized data, certain classes of EPC tags can include user-defined data. The GS1 tag data specifications define the length and position of this data, without defining its content.

GS1. A neutral, not-for-profit industry organization representing more than 500 global commerce leaders in the United States, who together are focused on improving global supply chains by use of RFID and the EPC. GS1 EPC global is part of GS1, the most widely used supply chain standards system in the world.

individual item. A single instance of a stock-numbered item, a single assembly, or a single subassembly.

inventory. Materiel, titled to the U.S. Government, held for sale or issue, held for repair, or held pending transfer to disposal.

item identification. A collection and compilation of data to establish the essential characteristics of an item that give the item its unique character and differentiate it from other supply items.

IUID. A system of establishing globally common unique identifiers on items of supply within the DoD that serves to distinguish a discrete entity or relationship from other like and unlike entities or relationships. AIT is used to capture and communicate IUID information.

key performance indicators. Quantifiable measures used to evaluate the success of the supply chain, including enterprise level, functional level, and program or process level metrics established in Paragraph 7.2. of Volume 10 of this manual.

marking. The application of legible numbers, letters, labels, tags, symbols, or colors to ensure proper handling and identification during shipment and storage.

materiel management.

Continuing actions relating to planning, organizing, directing, coordinating, controlling, and evaluating the application of resources to ensure the effective and economical support of military forces. It includes provisioning, cataloging, requirements determinations, demand and supply planning, acquisition, distribution, maintenance, and disposal of materiel.

The terms “materiel management,” “materiel control,” “inventory control,” “inventory management,” and “supply management” are synonymous.

materiel manager. Any DoD activity or agency that has been assigned materiel management responsibilities for the DoD and participating federal agencies. The term includes responsibilities performed by either wholesale materiel managers or retail materiel managers: managing, cataloging, demand and supply planning, requirements determination, procurement, distribution, overhaul and repair of reparable materiel, and disposal of materiel.

passive RFID tag. A radio frequency tag that reflects energy supplied to the tag by a reader or interrogator, or that receives and temporarily stores a small amount of energy from the reader or interrogator signal to generate the tag response. A passive RFID tag has no active transmitter that can create a response signal.

provisioning. The management process of determining and acquiring the range and quantity of support items necessary to operate and maintain an end item of materiel for an initial period of service.

RBS. A requirement determination process that computes the levels of secondary item spares needed to support a weapon system readiness goal at least cost. Synonymous with “readiness-based requirements” and “sparing-to-availability.”

RBS tool. An analytical capability primarily used to set sparing levels. Examples of other applications that an RBS tool can support include:

Assessing the inventory investment required for the fielding of a new program (e.g., weapon system or subsystem).

Negotiating supplier performance based logistics agreements.

Assessing the impact of reliability, maintainability, or supportability improvements on weapon system readiness.

Planning and developing budgets.

Conducting what-if exercises related to deployments.

readiness. A measure or measures of the ability of a system to undertake and sustain a specified set of missions at planned peacetime and wartime utilization rates. Examples of system readiness measures are combat sortie rate, fully mission capable rate, and operational availability. Measures take account of:

The effects of system design, reliability, maintainability.

The characteristics of the support system.

The quantity and location of support resources.

reparable item. An item of supply subject to economical repair and for which the repair (at either depot or field level) is considered in satisfying computed requirements at any inventory level.

supplier. Organic or commercial sources for items of supply.

supply chain. The linked activities associated with providing materiel from a raw material stage to an end user as a finished product.

SCM. Meeting customer-driven materiel requirements through the acquisition, maintenance, transportation, storage, and delivery of materiel to customers. Includes managing materiel returns; moving reparable materiel to and from maintenance facilities, and ensuring the exchange of information among customers, maintainers, supply chain managers, and suppliers.

technical data. Recorded information used to define a design and to produce, support, maintain, or operate the system or subsystem. Rights to data are acquired and retained in accordance with the program manager's data management strategy. Technical data as defined in this manual is not the same as, but could include technical data as defined in U.S. export control regulations in Parts 120 through 130 of Title 22, Code of Federal Regulations.

Examples of technical data include research and engineering data, engineering drawings, and associated lists, specifications, standards, process sheets, manuals, technical reports, technical orders, catalog-item identifications, data sets, studies and analyses and related information, and computer software.

technical information.

Includes technical data or computer software of any kind that can be used, or adapted for use, in the design, production, manufacture, assembly, repair, overhaul, processing, engineering, development, operation, maintenance, adapting, testing, or reconstruction of goods or materiel.

Also includes any technology that advances the state of the art, or establishes a new art, in an area of significant military applicability in the United States. The data may be in tangible form, such as a blueprint, photograph, plan, instruction, or an operating manual, or may be intangible, such as a technical service or oral, auditory, or visual descriptions.

UII. A set of data elements marked on items that is globally unique and unambiguous. The term includes a concatenated UII or a DoD-recognized unique identification equivalent.

REFERENCES

- Code of Federal Regulations, Title 22
- Defense Federal Acquisition Regulation Supplement, current edition
- Defense Transportation Regulation 4500.9-R, Parts II and III, “Defense Transportation Regulation,” current edition
- Deputy Secretary of Defense Memorandum, “Establishment of the Office of the Under Secretary of Defense for Research Engineering and the Office of the Under Secretary of Defense for Acquisition and Sustainment,” July 13, 2018
- DoD Directive 5134.01, “Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)),” December 9, 2005, as amended
- DoD Instruction 2040.02, “International Transfers of Technology, Articles, and Services,” March 27, 2014, as amended
- DoD Instruction 4140.01, “DoD Supply Chain Materiel Management Policy,” December 14, 2011, as amended
- DoD Instruction 5000.02, “Operation of the Defense Acquisition System,” January 7, 2015, as amended
- DoD Instruction 5200.44, “Protection of Mission Critical Functions to Achieve Trusted Systems and Networks,” November 5, 2012, as amended
- DoD Instruction 8500.01, “Cybersecurity,” March 14, 2014
- DoD Instruction 8582.01, “Security of Unclassified DoD Information on Non-DoD Information Systems,” June 6, 2012, as amended
- DoD Manual 4140.01, Volume 9, “DoD Supply Chain Materiel Management Procedures: Materiel Programs,” February 16, 2018, as amended
- DoD Manual 4140.01, Volume 10, “DoD Supply Chain Materiel Management Procedures: Supply Chain Inventory Reporting And Metrics,” March 9, 2018, as amended
- DoD Manual 4140.01, Volume 11, DoD Supply Chain Materiel Management Procedures: Inventory Accountability and Special Management and Handling,” March 8, 2017, as amended
- DoD Manual 5200.01, Volume 4, “DoD Information Security Program: Controlled Unclassified Information (CUI),” February 24, 2012, as amended
- Federal Information Processing Standards Publication 140-2, “Security Requirements for Cryptographic Modules,” May 25, 2001, as amended¹
- International Organization for Standardization and the International Electrotechnical Commission 15415, “Information Technology – Automatic Identification and Data Capture Techniques – Bar Code Symbol Print Quality Test Specification,” current edition²
- International Organization for Standardization and the International Electrotechnical Commission 15418, “Information Technology – Automatic Identification and Data Capture Techniques – GS1 Application Identifiers and MH10 Data Identifiers and Maintenance,” current edition²

¹ Available from <http://csrc.nist.gov/publications/PubsFIPS.html>.

² Available from <https://www.iso.org/standards.html>

International Organization for Standardization and the International Electrotechnical Commission 15434, “Information Technology – Automatic Identification and Data Capture Techniques – Syntax for High-Capacity ADC Media,” current edition²

International Organization for Standardization and the International Electrotechnical Commission 16022, “Information Technology – Automatic Identification and Data Capture Techniques – Data Matrix Bar Code Symbology Specification,” current edition²

International Organization for Standardization and the International Electrotechnical Commission 18000-6, “Information Technology – Radio Frequency Identification for Item Management – Part 6: Parameters for Air Interface Communications at 860 MHz to 960 MHz General,” current edition²

International Organization for Standardization and the International Electrotechnical Commission 18000-7, “Information Technology – Radio frequency Identification for Item Management – Part 7: Parameters for Active Air Interface Communications at 433 MHz,” current edition²

Institute of Electrical and Electronics Engineers 802.11 series of standards, “Wireless Local Area Networks (WLANs)” current edition³

Military Standard MIL-STD-129, “Department of Defense Standard Practice for Military Marking for Shipment and Storage,” current edition

³ Available from <http://www.ieee802.org/11/>