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AIR FORCE MATERIEL COMMAND**

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This publication implements Air Force Instruction (AFI) 20-110, *Nuclear Weapons-Related Materiel Management* and AFI 20-110_Air Force Materiel Command Supplement, AFI 63-101/20-101, *Integrated Life Cycle Management, and Military Standard (MIL-STD)-130N, Change 1, Department of Defense Standard Practice Identification Marking of U.S. Military Property*. It provides guidance and procedures related to Item Unique Identification (IUID) enabled Serialized Item Management (SIM) and applies to all organizations within the Air Force Materiel Command (AFMC). Note: All contractor requirements contained within this Air Force Materiel Command Instruction (AFMCI) must be contained within the contract/grant/agreement to be enforceable. This publication is not applicable to Air National Guard or Air Force Reserve. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using Air Force (AF) Form 847, *Recommendation for Change of Publication*. This publication may be supplemented at any level but must be routed to the OPR of this publication for coordination prior to certification and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See Air Force Instruction (AFI) 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate

Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items.

SUMMARY OF CHANGES

This Interim Change revises AFMCI 20-104 by (1) updating applicable verbiage in light of the AFMC/A4N and AF/A4PT reorganization (May 2018) resulting in the formation of A4NL; (2) includes minimal revisions to Roles and Responsibilities for specific Major Commands; (3) provides additional guidance/updates on IUID implementation; and (4) includes updated/added terms and reintroduces select acronyms per Attachment 1. This document has been updated to be in compliance with Secretary of the Air Force guidance concerning ease of understanding and clarity of language. A margin bar (|) indicates newly revised material.

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Chapter 1

INTRODUCTION

1.1. Background. The Department of Defense (DoD) has recognized Item Unique Identification (IUID) as a key Automatic Identification Technology (AIT) enabler for improving enterprise-wide asset visibility and accountability in the supply chain. Department of Defense Instruction (DoDI) 8320.04, *Item Unique Identification Standards for Tangible Personal Property*, requires the global use of Unique Item Identifiers (UIIs) as a common key in financial, property accountability, acquisition, supply, maintenance, and logistics systems. Tangible personal property refers to property that can be physically moved to include Class II, Class V, Class VII, Class VIII and Class IX items. The enterprise-level implementation of IUID will allow for tracking of military and general equipment assets throughout their life cycle resulting in enhanced capabilities for logistics, engineering, and financial management. These enhancements will lead to supply chain optimization, performance improvements, and process streamlining.

1.2. Purpose. The primary purpose of IUID is to provide the AF the capability to generate and collect unique item data for managing materiel of uniquely identified items in order to enhance asset visibility, financial accountability, and improve weapon system life cycle management.

1.3. Scope. The scope of this instruction includes qualifying tangible personal property that requires item-level traceability and is procured or sustained by AFMC. This includes Class II, Class V, Class VII, Class VIII and Class IX items procured or sustained by others on behalf of AFMC.

1.4. IUID. IUID is the DoD's initiative to mark qualifying tangible personal property with a symbol containing a UII data set to construct a globally unique and unambiguous item identifier using the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) 16022 ECC 200 two-dimensional data matrix encoding (Ref. Attachment 2, *USAF IUID Data Matrices and Formats*, for specific data matrix format requirements). AIT includes linear barcodes, two-dimensional (2D) barcodes, and Radio-Frequency Identification (RFID) technologies along with the computerized infrastructure of optical readers and scanners to collect and associate data with items. In accordance with DoDI 8320.04, DoD Components must enable the use of UIIs with AIT readers and electronic data interchange.

1.4.1. Automated Information Systems (AISs) are computer information systems that store and process data collected using AIT to enable better decision processes concerning the management of items.

1.4.2. The objective of IUID is to improve the availability of Military Equipment while reducing sustainment costs. This is achieved by having timely and reliable data on AF property. With higher-quality data, better item maintenance and procurement decisions are feasible to ensure that proper items are available for Warfighters at the desired location when needed, without requiring excessive amounts of resources in secondary inventories.

1.4.3. IUID will improve weapon system reliability and maintainability by providing the capability to uniquely track, monitor, and manage repairable assets across the maintenance enterprise. Uniquely identified repairable assets will enable item managers, engineers, and maintenance personnel to identify 'bad actor' assets that repeatedly fail to meet reliability

standards. Removing 'bad actor' assets from the reparable asset pool, and providing reliable replacements, will decrease maintenance removals and asset repair actions thereby increasing weapon system reliability and maintenance capacity.

1.4.4. Improved logistics processes through IUID include depot maintenance, warranty management, safety-of-flight item management, and an overall improvement of the disposal process.

1.4.5. The financial management community expects enhanced asset visibility, enabled by IUID, to achieve Financial Improvement and Audit Readiness (FIAR), as well as accurate physical inventory reporting and asset valuation.

1.4.6. Other benefits realized as a result of IUID include parts life usage determination, parts availability, automated data capture, repair/materiel demand planning, deployed support equipment management, reduction and mitigation of supply chain risk, and timely parts location.

Chapter 2

ROLES AND RESPONSIBILITIES

21. Overview. This chapter defines roles and responsibilities for organizations accountable for managing and executing IUID within AFMC. Additional complementary functional and organizational directions and details to execute roles and responsibilities can be found throughout this document and in AFI 63-101/20-101.

22. Headquarters AFMC designates:

2.2.1. AFMC/A4 shall lead IUID implementation and management for AFMC. As the Command's IUID lead, A4 shall work with A5/A8/A9, applicable Centers and Program Managers to consolidate Program Objective Memorandum (POM) inputs to implement and resource IUID at all levels for all AF assets in the various Classes of Supply.

2.2.2. The AFMC AIT Program Office within AFMC/A4N shall oversee project implementation and the implementation of AIT applications and tools to exploit and enable SIM in support of functional owner requirements.

2.2.3. The AFMC Logistics Readiness Division AFMC/A4R shall develop and maintain IUID operational use policy.

2.2.4. The Air Force Sustainment Center (AFSC) shall lead marking and registration of legacy Class VII and Class IX items with an IUID requirement during depot repair activity. Item owners shall ensure newly marked assets are entered into the DoD IUID Registry.

2.2.5. The Air Force Nuclear Weapons Center (AFNWC) shall serve as the executive agent for management of Nuclear Weapons-Related Materiel (NWRM) with responsibility for IUID implementation on NWRM assets.

2.2.6. The Air Force Life Cycle Management Center (AFLCMC) shall serve as the lead organization to ensure IUID compliance during acquisition and sustainment life cycle management of systems (in accordance with AFI 63-101/20-101).

2.2.7. All Centers and subordinate organizations shall incorporate Defense Federal Acquisition Regulation Supplement (DFARS) policy for item identification and valuation requirements into applicable solicitations and contracts resulting in the delivery of tangible personal property to the AF.

2.2.8. **(ADDED)** The AFSC Supply Chain Management Group shall serve as the lead organization to ensure IUID compliance during acquisition and sustainment life cycle management of systems (in accordance with AFI 63-101/20-101) for those items they manage and/or over which they have cognizant authority.

23. AFMC Systems Integration Division (A4N) is responsible for the AFMC AIT Program and shall:

2.3.1. Act as the AFMC agent for planning, managing, and implementing IUID on AF owned assets to provide positive identification, visibility, and capturing of supply chain events.

2.3.2. Serve as the lead organization for IUID Program execution within AFMC.

- 2.3.3. Provide subject matter expertise to Headquarters Air Force (HAF), HQ AFMC, and AFMC organizations on AIT and IUID implementation.
- 2.3.4. Implement command solutions and applications to advance AFMC AIT, SIM IUID, and other technologies to enhance asset visualization capabilities.
- 2.3.5. Receive, consolidate, and submit requirements affecting enterprise-wide implementation to develop budget submissions.
- 2.3.6. DELETED
- 2.3.7. Prepare and maintain, as needed, class of supply-based IUID implementation plans to mark legacy assets.
- 2.3.8. Host and lead project reviews, working groups, and other ad hoc teams governing or facilitating IUID implementation and sustainment within AFMC.
- 2.3.9. DELETED
- 2.3.10. DELETED
- 2.3.11. Interpret and disseminate DoD and AF IUID policy to AFMC Staff offices and Centers.
- 2.3.12. Serve as the lead advocate for AIT and IUID requirements and proposed changes for AFMC Logistics Information Technology Portfolio.
- 2.3.13. Serve as the AFMC lead for technology integration in support of IUID.
- 2.3.14. (ADDED) Serve as the AFMC IUID support lead for Class IX supply items.

24 AFMC Logistics Readiness Division (A4R) shall:

- 2.4.1. Serve as the lead for development of IUID operational use policy within AFMC.
- 2.4.2. Provide supplemental guidance, as applicable, on IUID implementation and inclusion into functional processes and organizations.

25 AFMC Maintenance Division (A4M) shall:

- 2.5.1. Include IUID requirements, as needed, in policy development.
- 2.5.2. Provide supplemental guidance on IUID implementation and inclusion into depot maintenance processes and organizations.

26 AFMC Engineering & Technical Management (A4/10/A4-EN) shall:

- 2.6.1. Provide subject matter expertise and act as OPR within AFMC for AF policy and guidance on systems engineering as it applies to IUID implementation.
- 2.6.2. Provide supplemental systems engineering guidance on IUID implementation, as required.

27 AFMC Contracting (PK) should:

- 2.7.1. Provide subject matter expertise and act as OPR within AFMC for AF policy and guidance on procurement activities as it applies to IUID implementation.

2.7.2. Support the Command through the inclusion of appropriate IUID DFARS contract clauses for the acquisition of both stock listed and non-stock listed assets in all solicitations, contracts, and commercial acquisitions.

28. AFMC Financial Management (FM) should:

2.8.1. Provide oversight in the use of IUID appropriated program funds and the Working Capital Fund.

29. AFMC Strategic Plans, Programs, Requirements, & Assessments (A5/A8/A9) should:

2.9.1. Assist AFMC organizations, as necessary, with IUID POM requirements.

210. AFMC Communications (A3/6) should:

2.10.1. Support the identification of cyberspace requirements for IUID at AFMC installations.

2.10.2. Provide subject matter expertise within AFMC for AF cyberspace policy and guidance as it applies to IUID implementation.

211. Air Force Sustainment Center (AFSC) shall:

2.11.1. Serve as the lead organization for marking legacy depot items that meet requirements for IUID marking and registration in the DoD IUID Registry.

2.11.2. DELETED

2.11.3. Appoint an Office of Primary Responsibility (OPR) within the AFSC, in writing, to lead and manage overall IUID activities and attend any project reviews, working groups, and other ad hoc teams governing or facilitating IUID within the AFSC. Collaborate Air Logistics Complexes (ALCs) into one cohesive structure for policy and efforts as it pertains to IUID. Serve as the lead to keep ALCs informed on any new changes to IUID policy and/or process changes.

2.11.3.1. **(ADDED)** The AFSC OPR will request a functional representative from each ALC be assigned, in writing, to act as the representatives for IUID program implementation at each maintenance complex, coordinating activities for all organizations supporting IUID marking of assets flowing through the depot repair process and attend any project reviews, working groups, and other ad hoc teams governing or facilitating IUID.

2.11.3.2. **(ADDED)** The AFSC OPR will submit planned IUID implementation and sustainment budget requirements for all asset marking hardware to Air Force Sustainment Center/Logistics (AFSC/LG).

2.11.4. Sustain IUID marking for all applicable items on AFSC accountable records.

2.11.5. Report marking and compliance metrics to AFMC/A4N concerning IUID implementation as required.

2.11.6. Reference the IUID indicator in the Defense Logistics Agency (DLA) Federal Logistics Information System (FLIS) and D043A to determine the need for inclusion of an IUID requirement into acquisition contracts.

2.11.7. Actively maintain the IUID marking requirement indicator in D043A and manage updates to FLIS and D043A for AFSC managed assets.

2.11.8. The 448th Supply Chain Management Wing, in support of AFSC, will ensure appropriate DFARS language is included in all acquisition contracts with an IUID requirement.

2.11.9. The 448th Supply Chain Management Wing, in support of AFSC, will reference/maintain the IUID indicators in FLIS and D043A to determine IUID requirements.

212 Air Force Life Cycle Management Center (AFLCMC) shall:

2.12.1. Serve as the lead organization to provide IUID related supplemental guidance to Program Managers.

2.12.2. Appoint an OPR, in writing, to lead and coordinate overall IUID activities within the AFLCMC.

2.12.3. Review, advise upon, and approve suggested IUID related engineering changes and Technical Order (TO) changes as appropriate.

2.12.4. Serve as the lead organization for guidance to Program Managers on IUID issues specific to Operational Safety, Suitability, and Effectiveness (OSS&E) requirements on parts identified for marking, with the exception of NWRM.

2.12.5. Ensure Program Managers are in compliance with IUID implementation guidance.

2.12.5.1. Ensure Program Managers begin IUID implementation planning after the program has been formally established and include the approved IUID Implementation Plan in the Systems Engineering Plan in accordance with AFI 63-101/20-101. For more information and non-directive best practices (for example, recommended plan template and coordination path), refer to Air Force Pamphlet (AFPAM) 63-128, *Integrated Life Cycle Management*.

2.12.6. Serve as Command's lead organization for all AF T-1 and T-2 modifications.

2.12.7. DELETED

2.12.8. Reference the IUID indicator in the FLIS and D043A to determine the need for inclusion of an IUID requirement into acquisition contracts.

2.12.9. Coordinate conventional munitions (Class V) IUID guidance and issues with the Joint Ordnance Commanders Group.

213 Air Force Installation and Mission Support Center (AFIMSC) shall:

2.13.1. Serve as the lead organization for guidance to Program Managers on IUID issues specific to Airman and Family Services, base communications, chaplain services, civil engineering, contracting, logistics readiness, public affairs, security forces, and financial management programs.

2.13.2. Sustain IUID marking for all equipment items on AFIMSC accountable records.

2.13.3. Ensure applicable DFARS language is included in the acquisition of assets.

2.13.4. Reference the IUID indicator in the FLIS and D043A to determine the need for inclusion of an IUID requirement into AFIMSC acquisition contracts.

2.13.5. Appoint an OPR, in writing, to lead and coordinate overall IUID activities within the AFIMSC.

214. Air Force Test Center (AFTC) shall:

- 2.14.1. Sustain IUID marking for all equipment items on Test Center accountable records.
- 2.14.2. Ensure applicable DFARS language is included in acquisition of assets.
- 2.14.3. Reference the IUID indicator in the FLIS and D043A to determine the need for inclusion of an IUID requirement into Test Center acquisition contracts.
- 2.14.4. Appoint an OPR, in writing, to lead and coordinate overall IUID activities within the Air Force Test Center.

215. Air Force Research Laboratory (AFRL) shall:

- 2.15.1. Sustain IUID marking on all stock-listed equipment items obtained from the DoD supply chain for research purposes and on AFRL accountable records.
- 2.15.2. Since most AFRL assets will never enter the DoD supply chain, items procured in support of research do not require DoD IUID Registry registration while in AFRL control.
- 2.15.3. Use locally determined unique identifier to track all commercially procured equipment and in-use stock-listed equipment while in AFRL possession.
- 2.15.4. Appoint an OPR, in writing, to lead and coordinate overall IUID activities within the AFRL.

216. Air Force Nuclear Weapons Center (AFNWC) shall:

- 2.16.1. Serve as the lead organization for guidance to Program Managers on IUID issues specific to OSS&E requirements on NWRM.
- 2.16.2. Incorporate applicable DFARS guidance, and AFI 20-110_AFMC Supplement and subsequent revisions, for IUID implementation as it applies to Government Furnished Property (GFP).
- 2.16.3. Sustain IUID marking for all equipment items on AFNWC accountable records.
- 2.16.4. Reference the IUID indicator in the FLIS and D043A to determine the need for inclusion of an IUID requirement into AFNWC acquisition contracts.
- 2.16.5. Appoint an OPR, in writing, to lead and coordinate overall IUID activities within the AFNWC.

Chapter 3

IUID IMPLEMENTATION

31. General. The population of assets subject to IUID marking includes items with inherent item-level traceability. Items deemed by the appropriate materiel manager to require IUID are thereby given an item-level traceability requirement. This instruction provides direction on implementing IUID for all qualifying items with additional direction on items with item-level traceability requirements.

3.1.1. The AF utilizes an IUID candidate identification methodology based on Classes of Supply. Each Class of Supply (Class II, Class V, Class VII, Class VIII and Class IX) is analyzed for National Stock Numbers (NSNs) which meet Office of the Secretary of Defense (OSD) marking criteria and provide value to the AF.

3.1.2. Materiel Managers shall implement IUID for existing personal property in inventory and operational use, including items manufactured by organic DoD depots. They must record the IUID data in the DoD IUID Registry for those items that meet the criteria for IUID per DoDI 8320.04; refer to Figure 1 on page 12 of Instruction 8320.04 for further guidance. (T-0)

32. Determining Items Requiring IUID.

32.1. The OSD sets forth the policy for DoD IUID implementation.

32.2. DoDI 8320.04 establishes the policy and criteria that qualify an item for IUID implementation.

32.3. DFARS 211.274-2 establishes the mechanism to direct vendors to implement IUID within acquisitions.

32.4. The AF uses the DoDI 8320.04 decision criteria flowchart on page 12 of said Instruction to determine IUID applicability per asset.

32.5. **(ADDED)** For a new weapon system or incremental modifications to current weapon systems, IUID requirements shall implement IUID to support SIM in accordance with AFI 63-101/20-101.

33. Managing the FLIS and D043A IUID Indicator.

33.1. The FLIS catalogue contains an IUID indicator field that specifies if a stock listed item requires IUID marking, as well as DoD IUID Registry registration. The FLIS IUID indicator is either “N” for no or “Y” yes. The AF D043A Master Item Identification Database has a separate IUID indicator field per stock listed item as part of the Item Management Control System (IMCS) software suite. The D043A value of “0” indicates an IUID requirement does not currently exist for that item. This will correspond to a FLIS IUID indicator of “N”. The D043A value of “1” indicates an IUID requirement exists for the item and the FLIS IUID indicator equals “Y”. The D043A value of “2” indicates an IUID requirement exists for the item but the FLIS IUID indicator equals “N” and requires an update to “Y”. Refer to the D043A HELP Screen for the numeric IUID values and their definitions.

3.3.1.1. For all assets with the AF as the Primary Inventory Control Activity (PICA), the materiel manager shall work with AFSC/Logistics Operations Division to set or update the

IUID indicator in the FLIS and D043A to the appropriate setting using the criteria found in DoDI 8320.04. (T-0)

3.3.1.2. For all new and legacy stock listed items, the IUID indicator in the FLIS and D043A must be referenced to identify if an item has an IUID requirement.

3.3.1.3. When the PICA determines that a change of IUID requirement is required, or:

33.131.□□□□□□ If the item manager/equipment specialist (IM/ES) determines, via the DOD Unique Item Level Traceability Requirement Determination matrix (ref. DoDI 8320.04), that IUID marking is required, and if the FLIS indicator is not flagged for IUID, the IM/ES will initiate the change to the IUID FLIS indicator via the AF D143C FLIS Edit and Routing System.

33.132.□□□□□□ If the change to a NSN requires that the FLIS IUID indicator is unflagged, the IM/ES must send a change request to the AFSC/LOME mailbox: IMCSCustomerSer@us.af.mil. The change request must include justification for the change to the IUID indicator, concurrence from the AFSC IUID OPR, and whether the item is registered in the DoD IUID Registry. Originator will receive status change or no change reply.

33.133.□□□□□□ (ADDED) The IM/ES must include, in the remarks section of the D143C, the justification and verification that the decision was made in accordance with the DoD Unique Item Level Traceability Requirement Determination matrix in the DoDI 8320.04. The IM/ES must also include verification that the item is registered within the DoD IUID Registry. The Wide Area Work Flow should be used to confirm IUID Registry completion in accordance with the DoDI 8320.04.

3.3.1.4. If the change request is accepted and the IUID Indicator has changed in both FLIS and the D043A, the PICA materiel manager must update the applicable IUID implementation plan accordingly.

3.3.1.5. Program Managers shall ensure that the IUID Indicator is updated for all items included in their implementation plans. Program Managers shall include setting the IUID indicator as part of the standard cataloging checklist.

3.3.1.6. If the change request is rejected, the IUID indicator will remain as-is in FLIS and D043A.

3.3.1.7. The requiring activity must ensure all contracts include the appropriate DFARS IUID requirement language when there is an IUID requirement.

34 Determining IUID Requirements for Legacy Assets.

34.1. Class II assets requiring IUID will be developed with direction from Class II functional item managers to identify IUID requirements.

34.2. Class V assets requiring IUID will be developed with direction from Class V functional item managers and in accordance with AFI 21-201, section 3.24, to identify IUID requirements.

34.3. Class VII IUID legacy asset marking will adhere to requirements as outlined in AFI 23-101.

344. Class VIII assets requiring IUID will be developed with direction from Class VIII functional item managers to identify IUID requirements.

345. Legacy Class IX IUID asset population will be based on AF repairable assets that meet all of the following criteria:

3.4.5.1. Depot Level Repairable assets with a positive FLIS and D043A IUID indicator.

3.4.5.2. Depot Level Repairable assets with an active buy or repair requirement for the previous two years, or with a buy or repair requirement that is projected for the next three years.

3.4.5.3. Depot Level Repairable assets with a Source of Supply/Source of Repair of an AF depot.

346. NWRM identified by the materiel manager as having an IUID requirement shall follow standard IUID marking and registration processes in accordance with DoDI 8320.04 and this policy. **(T-0)**

3.4.6.1. In addition, Materiel Managers shall identify assets on the Nuclear Certified Equipment List or Nuclear Certified Item List that are not considered common support equipment and are managed by the Intercontinental Ballistic Missile (ICBM) Program Office, Cruise Missile (CM) Program Office, or Weapons Storage and Security System (WS3) Program Office. **(T-0)**

35. Item Marking and Registration Requirements.

35.1. Materiel Managers shall adhere to the following general business rules applicable to the assignment of UIIs to items, the physical marking of UIIs on items (Ref. MIL-STD-130), and registration of UIIs along with the associated pedigree data. **(T-0)**

3.5.1.1. Only one UII will be assigned to each asset and registered in the DoD IUID Registry. The assigned UII must remain with the asset for its entire life cycle.

3.5.1.2. UIIs will be assigned and physically marked on items qualifying for IUID implementation in the possession of the AF for items owned by the AF or leased through a capital lease. Reference DoDI 5000.64 for criteria to determine if a lease is a capital lease.

3.5.1.3. For new acquisition items that require IUID, Materiel Managers shall ensure items are marked with UIIs and registered in the DoD IUID Registry before they are issued to field-level units. **(T-0)**

3.5.1.4. Ensure use of UIIs in all unique item tracking, serial number tracking, and SIM processes.

3.5.1.5. Incorporate IUID for critical materiel identified as susceptible to counterfeiting to enable authoritative life cycle traceability and authentication in accordance with DoDI 4140.67, *Department of Defense Counterfeit Prevention Policy*.

3.5.1.6. A supply discrepancy report will be generated by recipients of materiel in the event of an IUID discrepancy in accordance with MIL-STD-130 and as directed by Defense Logistics Manual (DLM) 4000.25, Volume 2, paragraph C17.3.8.

3.5.1.7. When an item is marked in accordance with MIL-STD-130, the marking activity must also ensure the registration of the UII data set to the DoD IUID Registry in accordance with DoDI 8320.04.

35.1.7.1.□□□□□□ If an information system is not used to register the UII data set in the DoD IUID Registry, registration must occur manually through the DoD IUID Registry user portal on the Wide Area Work Flow (WAWF). However, manual registration of UII data is not advised.

3.5.1.8. When a physical mark is not feasible, a virtual UII may be assigned (see [paragraph 3.7](#) for virtual marking guidelines).

35.1.8.1.□□□□□□ Before assigning a UII to a qualifying item without a visible UII label or marking on it, the entity must verify that a UII has not already been assigned using the IUID Registry (<https://wawf.eb.mil/xhtml/unauth/home/login.xhtml>).

35.1.8.2.□□□□□□ The owning organization of an asset registered with a virtual UII and in the possession of another organization, shall verify and physically mark the UII upon its return.

3.5.1.9. Marking schemas may include imprinting or other distinguishable marks that do not affect form, fit, or function and should be reflected in applicable technical documentation as outlined in paragraph 3.6.4. of this document.

3.5.1.10. If an item is found to have been previously assigned a UII upon checking the registry, and is in need of being marked, the item in question shall be re-marked with the previously assigned UII in accordance with MIL-STD-130. **(T-0)**

3.5.1.11. For all items meeting IUID criteria, but without an assigned serial number, a serial number will be assigned by logistic organizations using the procedures found in section 5.4.3.3.1 of AFI 23-101.

3.5.1.12. In accordance with guidance outlined in AFI 63-101/20-101, the Program Manager, with support from the Product Support Manager will plan for and implement IUID. For more information and non-directive best practices, refer to AFPAM 63-128.

35.1.12.1.□□□□□□ DELETED

3.5.1.13. Separate IUID implementation plans are not required for sustainment activities marking legacy assets. Sustainment activities Work Center/Cost Center supervisors for legacy assets shall incorporate planning, programming, budgeting, and execution of IUID implementation requirements for legacy assets into day-to-day workload planning and scheduling. This includes registration in the DoD IUID Registry.

3.5.1.14. Critical Safety Item serialization and marking requirements shall be defined on the drawing or elsewhere in the Technical Data Package as outlined in paragraph 3.6.4. of this document.

36 Engineering Requirements.

36.1. Chief Engineers or Delegated Cognizant Engineers shall:

3.6.1.1. Consider all appropriate elements of the OSS&E of a part when making decisions on IUID markings (Ref. AFI 63-101/20-101) such as fatigue, life, and operating environment.

3.6.1.2. Serve as the final decision authority concerning whether applying an IUID constitutes a Class I engineering change for the weapon system (Ref. Military-Handbook-61B, *Configuration Management Guidance*).

3.6.1.3. Serve as the decision authority concerning whether the method of adding a UII to a current in-use legacy item/part requires additional technical documentation and engineering involvement.

3.6.1.4. Define criteria for weapons systems to identify whether the IUID Engineering Order is considered a Class I or Class II. This definition shall be included in the Systems Engineering Plan or equivalent document.

3.6.1.5. Consider methods to ensure readability of the mark during normal operational use (Ref. MIL-STD-130). Placement of the mark strongly influences its durability and usefulness.

3.6.1.6. UIIs are permanent and meant to last the lifetime of the part it is assigned to regardless of part number rolls or NSN changes. Ensure that any resulting TO or engineering documentation does not direct the change of a UII, particularly when part numbers change.

3.6.1.7. Ensure that when replacing an existing UII label or marking (due to either label damage, asset damage, etc.), the replacement UII label or marking contains the same UII in accordance with MIL-STD-130. The replacement mark must be in 25S format in accordance with TO 00-25-260.

3.6.1.8. Manage items on the Critical Safety Item list that meet IUID marking criteria for a Class I engineering change and do not have an existing data plate/label, ensuring all required technical documentation is updated as required.

3.6.1.9. **(ADDED)** Evaluate IUID placement when the item has no surface area that meets the requirements of MIL-STD-130. Equipment Specialists should elevate any decision to Materiel Managers for IUID placement when the item has no surface area that meets the requirements of MIL-STD-130.

362. IUID markings shall:

3.6.2.1. Remain readable throughout the items' normal life cycle. For depot repairable parts, this normal life cycle can be further defined to mean "remain readable through a normal operational usage cycle."

3.6.2.2. Withstand all environmental conditions of item exposure under normal operating conditions.

3.6.2.3. Provide no detrimental effects on the functional performance, reliability, or durability of the item.

363. Requirements for Engineering Orders (EOs).

3.6.3.1. EO IUID drawings, for which the USAF is the Current Design Activity (CDA), shall be issued in accordance with USAF configuration control requirements of the Program Office. These changes shall be considered a formal component of the drawing package as soon as they are approved and either the Joint Engineering Data Management and Information and Control System organization or the contracted data repository is notified. Please note, the USAF will not ordinarily revise a drawing simply to include IUID.

3.6.3.2. EOs shall be incorporated into the drawing with the next drawing revision.

3.6.3.3. The marking location and characteristics for IUID marking shall be included in an EO and/or drawing revision (unless the drawing already includes IUID) for drawings when the USAF is the CDA and the drawing describes parts which meet the requirements for IUID marking.

3.6.3.4. If the USAF is not the CDA, then the EO shall be issued as an Advance Engineering Supplemental Order. The EO will not be incorporated directly into the drawing but will accompany that drawing until the CDA decides to formally incorporate that change into the drawing. IUID EOs do not apply to Department of Energy designed materiel drawings.

364. Requirements for Technical Documentation.

3.6.4.1. TOs shall define the mark application method, the processes required to correctly apply the mark, the marking location, and mark verification/readability. This information shall be consistent with USAF TOs policies. **Note:** TOs shall reflect, not replace, the intent of engineering data.

3.6.4.2. TOs or drawings must incorporate IUID marking requirements, both for legacy parts/items and any future procurement when the marking method differs. This requirement applies even if new procurement is made using a legacy design.

3.6.4.3. If a marking process exists in multiple TOs (for example, one for cleaning procedures, one for application procedures, and one for mark location), the Process Order may be used to consolidate this information into one format for depot mechanics.

3.6.4.4. Process Orders shall describe the use of site-specific marking equipment (for example, the dial settings on a laser marking cart required to achieve TO-specified power and exposure levels for a particular part).

3.6.4.5. For all reparable assets (Class IX) that require IUID marking, engineering data and TOs shall be revised. When it is determined that drawing revisions (and/or other engineering source data) are required from the CDA, each Program Office is responsible for managing this effort, securing the appropriate funding, negotiating technical differences in the selection of marking techniques and locations, and setting schedules which meet the Program Office's needs.

3.6.4.6. DELETED

364.61.□□□□□□ DELETED

3.6.4.7. If items cannot be physically marked or tagged due to a lack of marking space or because marking or tagging would have a deleterious effect on the item, then the marking method shall be in accordance with MIL-STD-130.

3.6.4.8. **(ADDED)** A representative from the maintenance facility responsible for IUID marking of an asset is to follow the AFMC Form 202 Engineering Technical Assistance Request (ETAR) process to notify the Engineer of any Technical Data Packages for IUID marking that cannot be implemented during the IUID marking process. The representative will also email the Functional representative for the Air Logistics Complex a copy of the AFMC Form 202 (Ref. AFMCMAN 63-1202).

365. Technical Order Changes.

3.6.5.1. If an engineering data change is processed to include IUID on a component, subcomponent, assembly, or sub-assembly, and if a TO exists which specifies the overhaul, remanufacture, repair (or assembly) of that part, then it shall be updated to specify the processes and location for marking the item by IUID.

3.6.5.2. In reference to the preceding paragraph, the IUID marking method shall include all inspection procedures, part surface preparation procedures, all marking application procedures, and (unless marked with direct part marking) the data label, data plate, or IUID label part number (for example, 200945085-XXX).

3.6.5.3. The marking location specified in the TO shall be specific to the part and shall include sufficient detail to reflect the location and tolerances specified in the EO. In the case of multiple parts with the same configuration (for example, multiple avionics boxes with the same top level assembly), a common figure with multiple references may be used.

3.6.5.4. Program Offices may delay IUID updates to TOs that are not intended for AFMC depot use. This planned delay requires the Program Office to provide a detailed timeline for updates to all impacted TOs and correlation of the updates with planned marking processes by non-AFMC personnel (for example, by Time Compliance Technical Orders (TCTOs) or by intermediate repair facilities). Independent of the details of that phased plan, the TO shall be updated after repeated (no more than three) requests are received from maintenance for technical assistance to mark the part(s) for which non-depot repair procedures exist.

3.6.5.5. If the Illustrated Parts Breakdown (IPB) is contained in a separate -4, it is not to be used to specify the location or the method for marking a part with IUID. If applying IUID to a part changes a part number in the IPB (for example, if a new data plate is specified which differs from the existing data plate called out in the IPB), it shall be updated to show IUID. Otherwise, the IPB does not require an update to show IUID label location or part number. The nuclear enterprise shall adhere to AFNWC IPB requirements.

3.6.5.6. TO updates that are required because of IUID shall be implemented in accordance with standard TO 00-5-1 and 00-5-3 procedures. Engineering change requests and drawing revisions shall not be required when affixing labels with IUID markings to legacy equipment/principle items if the label does not impact characteristics necessary to ensure operational safety, suitability, and effectiveness.

365.6.1. DELETED

365.62.□□□□□□DELETED

365.63.□□□□□□DELETED

3.6.5.7. An IUID label or 2D matrix may be applied to the Original Equipment Manufacturer (OEM) or AF data plate in accordance with methods outlined in MIL-STD-130 if it does not obstruct existing information on the data plate. Note: This does not include Class IX items.

3.6.5.8. DELETED

3.6.5.9. DELETED

3.6.5.10. AFNWC Technical Order (TO) Home Office will coordinate any required changes with the appropriate agencies for TOs for Department of Energy designed material within the Joint Nuclear Weapons Publication System. AFNWC Nuclear Weapons Technical Support Branch no longer exists.

37. Use of Virtual UIIs.

37.1. Virtual UIIs enable the database entry of a UII and its associated pedigree data, while postponing the physical marking of items with a two-dimensional data matrix symbol to a more advantageous time based on logistic and economic considerations.

37.2. Virtual UIIs may be used to register GFP if authorized in DoD policy.

37.3. Virtual UIIs may be used to register DoD-owned assets that have not already been registered if authorized in DoD policy.

37.4. The use of virtual UIIs requires documented traceability between the specific part and the assigned virtual UII.

37.5. **(ADDED)** When assets assigned virtual UII's are physically marked during a trigger event, the IUID registry must be updated to indicate the UII is no longer virtual.

38. New Procurement Items.

38.1. For acquisition contracts procuring a new weapon system or incremental modification to current weapon systems, the Materiel Manager shall implement IUID requirements in support of SIM in accordance with direction contained in AFI 63-101/20-101. **(T-0)**

38.2. Program Managers shall work with logisticians and the Contracting Officer to ensure that acquisition contracts include IUID when required by the program IUID implementation plans and/or the IUID indicator in FLIS and D043A.

38.3. For acquisition of spares, the procuring activity shall implement IUID requirements in support of SIM.

38.4. In accordance with DFARS policy, the IUID requirement applies to Foreign Military Sales (Ref. DFARS 225.7301). Foreign Military Sales acquisitions will follow the same acquisition and contract management procedures used for other defense acquisitions.

38.5. For all new acquisitions, Data Item Descriptions shall be identified within each contract to hold contractors accountable for IUID marking and activities and verification of data, according to MIL-STD-130. **(T-0)**

386. All acquisition Statements of Work must contain Data Item Description language that explains the responsibilities of the contractor as it relates to IUID and MIL-STD-130.

387. Any asset that is marked as part of an acquisition event (to include spares procurement) must be registered in the DoD IUID Registry via the WAWF.

3.8.7.1. In accordance with applicable DoD policy, the contractor shall submit UIIs and provide the IUID data for items that are delivered under a DoD contract. **(T-0)**

3.8.7.2. If IUID is required in the contract, the vendor has not completed their contract requirements until the vendor registers the IUID data in the DoD IUID Registry, usually through WAWF. Vendors or suppliers will provide a list of UIIs and their associated pedigree data in the form of a spreadsheet that can be imported into Air Force IUID tracking systems.

39. Government Furnished Property (GFP).

391. In accordance with applicable DFARS policy, the custodial contractor shall report GFP to the DoD IUID Registry and its integral GFP Module for all GFP that meets IUID policy criteria. **(T-0)**

392. In addition to mandatory GFP data submissions, submission of other GFP data to the DoD IUID Registry is required for contracts with GFP awarded.

310. Intensive Item Management.

310.1. Based on approved technical data and engineering analysis and in accordance with AFI 20-110, as well as AFI 20-110_AFMC Supplement, NWRM shall be marked with a UII in accordance with DoDI 8320.04, AFI 63-101, and Methods and Procedures TO 00-25-260, *Asset Marking and Tracking Item Unique Identification Marking Procedures*. **Note:** This does not apply to Department of Energy designated NWRM. **(T-0)**

311. Contract Repair – Performance Work Statement (PWS) Guidelines.

311.1. The PWS shall include specification requirements for IUID marking. These will be contained in the applicable AF/OEM TO, Specific Work Requirements appendix, approved engineering drawing, or a Government provided EO as applicable. PWSs for Department of Energy designed materiel undergoing repair may exclude contractors from IUID requirements. Implementation shall be determined by the Program Manager once item(s) are re-delivered to the USAF.

311.2. For items that do not have IUID marking specifications, the PWS shall have requirements for the contractor to develop the marking specifications in accordance with the most current version of MIL-STD-130.

311.3. IUID markings are required for all end items and subcomponents to the end item specifically identified in the applicable AF/OEM TO, Specific Work Requirements appendix, approved engineering drawing, or a Government Provided EO.

311.4. IUID markings currently in place on items undergoing repair shall be protected from damage or removal during repair. Ensure 2D matrix IUID markings are readable per TO 00-25-260. Should IUID marking be rendered unreadable during repair, the contractor shall notify the Procurement Contracting Officer/Administrative Contracting Officer for determination.

3.115. IUID markings which will be potentially destroyed during repair due to technical direction (for example, paint removal, sand blasting, etc.) shall be recorded prior to maintenance action and replaced with the same UII as part of the repair action. The replacement mark must be in 25S format.

3.116. The contractor shall submit the required and applicable data for legacy items to the DoD IUID Registry per the data submission procedures at http://www.acq.osd.mil/dpap/pdi/uid/data_submission_information.html. (T-0)

312 DoD IUID Registry Life Cycle Events Reporting.

3.121. An appropriate life cycle event transaction will be sent to the DoD IUID Registry when a uniquely identified item is abandoned, consumed, destroyed by accident or combat operations, donated, expended, scrapped, sold, or stolen (see the full list of life cycle events in the IUID Registry User Guide). As part of their functional responsibilities, item managers will initiate actions resulting in AIS processing and transmitting these life cycle event transactions.

313 Use of Item Markings to Enhance SIM.

3.131. To the greatest extent practicable, manual data entry will not be used to enter item identification information into AFMC logistics information systems.

3.132. AIT will be used to scan and create logistics supply chain event transactions associated with individual items using the UII encoded into the data matrix symbol.

3.133. Logistics supply chain event transactions will be used to populate AFMC logistics information systems with the UII as the key data element to which all other data will be associated.

3.134. Data entered into AFMC logistics information systems shall use the exact alpha-numeric characters used by the manufacturer to identify the part number and serial number of an item.

3.135. Include UIIs on each unit pack, container, or palletized unit load in accordance with MIL-STD-129R, Military Marking for Shipment and Storage. Mark containers for NWRM in accordance with AFI 20-110_AFMC Supplement 9 Sep 2015, and subsequent revisions.

3.136. AFMC logistics information systems must be capable of accepting the UII (when determined to have an IUID requirement) and/or the exact alpha-numeric characters used by manufacturer to identify an item without changing the data in any fashion (for example, adding or removing leading zeros).

3.136.1. Integration of IUID must be a development requirement for any new logistics information system, in accordance with guidance outlined in the Air Force Enterprise IUID Implementation Plan.

3.137. If an item that requires a UII does not have a serial number assigned by the manufacturer, a serial number will be assigned and physically marked on the item, using the procedures found in section 5.4.3.3.1 of AFI 23-101. The serial number assigned by the AFMC organization will be unique with respect to all other instances of items assigned the same part number or Commercial and Government Entity (CAGE) Code.

3.138. Data associated to individual items using the UII will be used to improve materiel management practices throughout the AF.

3.139. IUID-enabled SIM will allow AFMC to capture asset related data with minimal or no manual data entry.

3.13.10. Condition Based Maintenance (CBM) can be defined as a set of maintenance processes and capabilities derived from real-time assessment of weapon system condition obtained from embedded sensors and/or external tests and measurements using portable equipment. The goal of CBM is to perform maintenance only upon evidence of need.

3.13.10.1. CBM Plus expands on these basic concepts, encompassing other technologies, processes, and procedures that enable improved maintenance and logistics practices. These future and existing technologies, processes, and procedures will be addressed during the capabilities planning, acquisition, sustainment, and disposal of a weapon system.

3.13.10.2. AIT enabled SIM shall be leveraged to achieve CBM Plus implementation within AFMC.

3.13.11. Increased efficiency and capability will improve product life cycle management through the use of AIT and IUID-enabled SIM. Efficiencies include reduced manpower costs, increased accuracy, and reduced time to prepare documentation for inventories, issue and subsequent cyclic issue/re-issue of sensitive items such as weapons. All items meeting the criteria, as stated in DoDI 8320.04, shall be marked with a UII. **(T-0)**

3.13.11.1. Using UII for serial item management will result in more timely, accurate, reliable, and actionable information that can improve maintenance and materiel management.

3.13.11.2. By implementing the necessary management information system changes and business process improvements to capture, integrate, and intelligently utilize maintenance and operating data recorded primarily through maintenance transactions, AFMC can achieve significant reliability, maintainability, and materiel management improvements.

3.13.11.3. UIIs will be a key enabler to achieving OSD Comptroller mandated FIAR compliance. UII will be the Individual Item Identifier data element used to support financial statement audits for DoD Mission Critical Assets. Mission Critical Assets include Military Equipment (for example, ships, aircraft, combat vehicles, engines), Real Property (for example, land, buildings, structures, utilities), Inventory (for example, rations, supplies, spare parts, fuel), Operating Materials and Supplies (for example, ammunition, munitions, missiles), and Support Equipment (for example, materiel handling equipment, training equipment, special tooling and test equipment). UII will support asset specific acquisition cost, depreciated value, and inventory valuation throughout the 'Acquire to Retire' asset life cycle management process, which is required to satisfy financial auditing requirements.

3.13.12. The IUID Registry supports DoD mandated FIAR requirements.

3.13.12.1. DoDI 8320.04 establishes the DoD IUID Registry as the central repository for government items with UIIs acquired after January 1, 2004 and for UII data elements established at delivery in accordance with subpart 252.211-7003 of DFARS. The Registry serves as the master data source for reporting GFP.

3.13.12.2. FIAR guidance states that UIIs will be used to associate physical assets with data records in accountable property system of records for Military Equipment, general

equipment, serially managed inventory, and serially managed Operating Materials and Supplies.

3.13.12.3. To effectively support SIM and FIAR, systems that identify transactions with individual assets via an asset identifier must be modernized to accommodate UIIs.

3.13.12.4. For intelligence-related tangible personal property, information that is classified or requires protection due to operations security considerations will not be maintained in the unclassified DoD IUID Registry. This information will be maintained by the intelligence entities within the applicable Military Services or Defense Agencies and will be available for review, on request, by those authorized by the DoDI 8320.04.

3.13.13. UII will enable Warranty Tracking for serialized assets procured from, and repaired by, commercial suppliers. Uniquely identifying warranted assets will allow item managers and maintenance personnel to identify items covered by warranty preventing unnecessary organic maintenance actions. In addition, assets with a UII can be tracked according to the terms of the specific procurement or repair contract to ensure warranty terms are not violated, thereby nullifying the supplier warranty. Ensuring warranted items are repaired by the responsible supplier in accordance with the terms of the procurement or repair contract will reduce organic repair of warranted assets, reduce the overall life cycle cost to the AFMC for those assets, and provide data used to justify the additional costs of a warranty for future procurements.

3.14. IUID-enabled SIM Programs. These programs should be designed and operated to optimize end item availability while minimizing support costs by:

3.14.1. Providing maintenance technicians and decision-makers rapid access to comprehensive and accurate information.

3.14.2. Improving the efficiency of maintenance and related processes (for example, eliminating manually-supported paperwork, reducing job times, enhancing maintenance task and personnel scheduling, and shrinking inventories).

3.14.3. Reducing maintenance requirements through better configuration management and item/select population life cycle history information.

3.14.4. Facilitating tracking of specific item performance to support reliability analysis, warranty claims, and repair performance evaluation.

3.14.5. AFMC should utilize IUID technology through AIT for logistics and for improving the efficiency of maintenance and related processes (for example, eliminating manually-supported paperwork, reducing job times, enhancing maintenance task and personnel scheduling, and shrinking inventories).

3.14.5.1. As resources become available, existing maintenance AISs shall be enhanced or modified to support the tenets of SIM programs. Effective SIM is a result of each Military Service's management practices.

3.14.6. Leveraging IUID-enabled SIM is critical to accelerating the speed and effectiveness of depot maintenance activities. The result is improved availability and higher-quality repair.

3.14.7. IUID will increase inventory accuracy for AFMC assets by providing a unique reference identifier for each asset processed during shipment, issue, and receipt. Transacting

assets using both the stock number and UII data elements will decrease the number of discrepant materiel management transactions by ensuring validation of UIIs for each item in the transaction. UIIs eliminate the possibility of shipping, issuing, or receiving a serialized asset under an incorrect stock number (Ref. MIL-STD-129).

3.148. UIIs will provide the unique serial number data element required by future state AFMC logistics systems. Ensuring UIIs are unrepeated in legacy systems will facilitate data conversion during system modernization and/or replacement and reduce data cleansing/preparation activities.

ALLAN E. DAY, Brigadier General, USAF
Director Logistics

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 20-110, Air Force Materiel Command Supplement, *Nuclear Weapons-Related Materiel Management*, 24 January 2019

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AFI 21-201, Air Force Guidance Memorandum 2017-01, *Munitions Management*, 3 June 2015

AFI 23-101, Air Force Guidance Memorandum 2018-02, *Materiel Management Policy*, 12 December 2016

AFI 63-101/20-101, *Integrated Life Cycle Management*, 9 May 2017

AFMCMAN 23-3, *Cataloging and Standardization*, 14 September 2010

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AFPAM 63-128, *Integrated Life Cycle Management*, 10 July 2014

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DLM 4000.25, Vol 2, *Defense Logistics Management Standards Volume 2, Supply Standards and Procedures*, Change 12, 2 April 2019

Department of Defense Guide to Uniquely Identifying Items: Assuring Valuation, Accountability and Control of Government Property, Version 3.0, 2 December 2014

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Methods and Procedures TO 00-25-260, *Asset Marking and Tracking Item Unique Identification Marking Procedures*, 15 October 2013

Military Handbook 61B SE, *Configuration Management Guidance*, 10 September 2002

MIL-STD-129R Change 1, *Department of Defense Standard Practice Military Marking for Shipment and Storage*, 24 May 2018

MIL-STD-130N Change 1, *Department of Defense Standard Practice Identification Marking of U.S. Military Property*, 16 November 2012

United States Air Force Enterprise Item Unique Identification Implementation Plan, 15 November 2016

Adopted Forms

AF Form 252, *Technical Order Publication Change Request*

AF Form 847, *Recommendation for Change of Publication*

AFMAN 33-363_Air Force Guidance Memorandum 2018-1, *Management of Records*, 30 May 2018

AF TO Form 22, *Technical Manual Change Recommendation and Reply*

Abbreviations and Acronyms

AF—Air Force

AFI—Air Force Instruction

AFLCMC—Air Force Life Cycle Management Center

AFMAN—Air Force Manual

AFNWC—Air Force Nuclear Weapon Center

AFMC—Air Force Materiel Command

AFMCI—Air Force Materiel Command Instruction

AFPAM—Air Force Pamphlet

AFRIMS—Air Force Records Information Management System

AFRL—Air Force Research Laboratory

AFSC—Air Force Sustainment Center

AIS—Automated Information System

AIT—Automatic Identification Technology

ALC—Air Logistics Complex

ASME—American Society of Mechanical Engineers

CAGE—Commercial and Government Entity

CDA—Current Design Activity

CBM—Condition Based Maintenance

CM—Cruise Missile

DLA—Defense Logistics Agency

DLM—Defense Logistics Manual

DFARS—Defense Federal Acquisition Regulation Supplement

DoD—Department of Defense

DoDI—Department of Defense Instruction

DoDM—Department of Defense Manual

ES—Equipment Specialist
EO—Engineering Order
FIAR—Financial Improvement and Audit Readiness
FLIS—Federal Logistics Information System
GFP—Government Furnished Property
HAF—Headquarters Air Force
ICBM—Intercontinental Ballistic Missile
IM—Item Manager
IMCS—Item Management Control System
ISO/IEC—International Organization for Standardization/International Electrotechnical Commission
IPB—Illustrated Parts Breakdown
IUID—Item Unique Identification
MIL-STD—Military Standard
MRI—Machine Readable Information
NSN—National Stock Number
NWRM—Nuclear Weapons-Related Materiel
OEM—Original Equipment Manufacturer
OPR—Office of Primary Responsibility
OSD—Office of the Secretary of Defense
PICA—Primary Inventory Control Activity
POM—Program Objective Memorandum
PWS—Performance Work Statement
RFID—Radio-Frequency Identification
RDS—Records Disposition Schedule
SIM—Serialized Item Management
TCTO—Time Compliance Technical Order
TO—Technical Order
UII—Unique Item Identifier
WAWF—Wide Area Work Flow
WS3—Weapons System and Security System

Terms

Bad Actor—For the purpose of this document, “bad actor” is defined as items that consume more than their proportionate share of maintenance resources.

Class I Engineering Change—Changes affect an item's fit, form or function. These are changes that affect an item's specifications, weight, interchangeability, interfacing, reliability, safety, schedule, cost, etc.

Class II Engineering Change—Changes to correct documentation or changes to hardware not otherwise defined as a Class I change.

Class II (Supply Class)—Includes clothing, individual equipment, tentage, organizational tool sets and kits, hand tools, unclassified maps, administrative and housekeeping supplies, and equipment.

Class V (Supply Class)—Ammunition of all types, bombs, explosives, mines, fuses, detonators, pyrotechnics, missiles, rockets, propellants, and associated items.

Class VII (Supply Class)—Major end items such as launchers, tanks, mobile machine shops, and vehicles.

Class VIII (Supply Class)—Medical equipment and consumables including repair parts peculiar to medical equipment.

Class IX (Supply Class)—Repair parts and components to include kits, assemblies, and subassemblies (reparable or non-reparable) required for maintenance support of all equipment.

Classes of Supply—The United States Military divides supplies into ten numerically identifiable classes of supply in order to facilitate supply management and planning. These Classes are as follows: I. Rations and gratuitous issue of health, morale, and welfare items. II. Clothing, individual equipment, tentage, tool sets, and administrative and housekeeping supplies and equipment. III. Petroleum, oils, and lubricants. IV. Construction materials. V. Ammunition. VI. Personal demand items. VII. Major end items, including tanks, helicopters, and radios. VIII. Medical. IX. Repair parts and components for equipment maintenance. X. Nonstandard items to support nonmilitary programs such as agriculture and economic development.

Construct #1—UUI type where the serial number is unique within the enterprise. Unique identifier data elements are linked together in order of the issuing agency code, enterprise identifier, and unique serial number within the enterprise identifier.

Construct #2—UUI type where the serial number is unique within the original Part Number, Identifying Number, lot, or batch number that is unique within the enterprise. Unique identifier data elements are linked together in order of the issuing agency code; enterprise identifier; original Part or Identifying Number, lot, or batch number; and serial number within the original Part or Identifying Number, lot, or batch number.

Commercial and Government Entity (CAGE) Code—A five position alphanumeric code with a numeric value in the first and last positions, excluding the letters I and O assigned to U.S. organizations which manufacture and/or control the design of items supplied to a Government Military or Civil Agency or assigned to U.S. organizations, primarily for identifying contractors in the mechanical interchange of data required by Military Standard Contract Administration Procedures and Service/Agency automatic data processing systems. The CAGE code is a type of

Enterprise Identifier (Ref. MIL-STD-130 or DoDM 4100.39)

Current Design Activity (CDA)—The design activity currently responsible for the design of an item (also see term: Design Activity). This may be the original design activity or a design activity to which the design responsibility has been transferred (In accordance with ASME Y14.100).

D043A—The D043A Master Item Identification Database provides on-line access to a wide range of logistics data. The system allows menu-driven interrogation of data derived from the IMCS and other systems. It also provides on-line access to certain data segments of the FLIS. D043A enhances user's ability to perform research and to identify and resolve logistics data problems in support of the AF mission. System availability is continuous, except for brief, intermittent periods of downtime required for file update and related maintenance (Ref. AFMC Manual 23-3).

D143C—The D143C System is designed to suspend AF Requests for Cataloging Data/Action from the Air Logistics Complexes, Contractor Inventory Control Points, and Logistics Readiness Squadron personnel on-line. It forwards some of these requests to the AF cataloging agent, to other special or mission-unique cataloging activities, IMCS, or directly to the FLIS database for further processing. It also receives data from these systems. (Ref. AFMC Manual 23-3).

Data Identifier 18S—A data format that links together the CAGE Code (Enterprise Identifier) + a unique serial number within the CAGE Code. This data element does not contain the issuing agency code, which is added to derive a UII using serialization within the enterprise. Additional supplemental data may be encoded into the MRI outside of the UII to enhance data usability at the maintainer level. (Ref. MIL-STD-130).

Data Identifier 25S—For UII purposes, 25S identifies a data format that links together the Issuing Agency Code + Enterprise Identifier + a unique serial number segment within the Enterprise Identifier, which directly corresponds to a UII using serialization within the enterprise. Additional supplemental data may be encoded into the MRI outside of the UII to enhance data usability at the maintainer level. (Ref. MIL-STD-130).

Data Matrix (2D)—The UII identifies an item with a set of data that is globally unique and unambiguous. The machine-readable symbology used for the mark, defined by ISO/IEC 16022, is a 2-dimensional (2D) Data Matrix symbol with Error Correction Code 200 (ECC 200) machine-readable symbology for UIIs. The data elements used to uniquely identify the item must be precisely encoded in the Data Matrix ECC 200 symbol in a message string, which is assembled to comply with the syntax formats of ISO/IEC 15434, Transfer Syntax for High Capacity Automatic Data Capture Media. Data Matrix symbols have a checkerboard appearance, with each uniformly spaced square shaped cell corresponding to a data bit. They are constructed of a mosaic of light and dark elements that must all be read before any characters can be recognized. Data Matrix symbols are encoded with binary code requiring an imager to read them.

Depot Level Repairable—An item that is designated for repair at depot-level, or that is designated for repair below the depot-level for which condemnation authority must be exercised by the cognizant depot-level repair activity.

Design—A complete definition of the physical and functional characteristics of a component or series of components.

Design Activity—An organization that has, or has had, responsibility for the design of an item (in accordance with ASME Y14.100).

DoD IUID Registry—UIIs are stored in the comprehensive IUID Registry which allows for easy access to information such as acquisition cost and life cycle data. The DoD IUID Registry is maintained by the DLA. The DoD IUID Registry of items marked with UIIs provides accurate and accessible unique identification and pedigree information about these items. This information is used to make acquisition, repair, and deployment of items faster and more efficient.

Engineering Change— (1) A change to the current approved configuration documentation of a configuration item. (2) Any alteration to a product or its released configuration documentation. Effecting an engineering change may involve modification of the product, product information and associated interfacing products. (Ref. MIL-HDBK-61B)

Engineering Order (EO)—A basic form document that allows you to supplement design information for an existing drawing. EOs document information that affect the content or status of an AF drawing or the products defined on contractor drawings. EOs may be approved only by the chief/lead engineer(s) authorized by the responsible Configuration Control Authority.

Enterprise Identifier—A unique identifier used to distinguish one activity or organization from another activity or organization. An enterprise identifier code is uniquely assigned to an activity by an issuing agency registered in accordance with procedures outlined in ISO/IEC 15459-2. An enterprise may be an entity such as a design activity, manufacturer, supplier, depot, and program management office or a third party.

Federal Logistics Information System (FLIS)—The single source of federal cataloging and related logistics management data to support the needs of DoD Components, participating agencies, and participating countries.

Government Furnished Property (GFP)—Property in the possession of, or directly acquired by, the Government and subsequently furnished to the contractor for performance of a contract. This includes, but is not limited to, spares and property furnished for repair, maintenance, overhaul, or modification. GFP also includes contractor acquired property if the contractor acquired property is a deliverable under a cost contract when accepted by the Government for continued use under the contract.

International Standard 15418—An International Standard that specifies sets of Data Identifiers and Application Identifiers for the purpose of identifying encoded data, and identifies the organizations responsible for their maintenance.

Issuing Agency—An organization responsible for assigning a non-repeatable identifier to an enterprise.

Item—A single hardware article or a single unit formed by a grouping of subassemblies, components, or constituent parts (Ref. DFARS 252.211-7007 or MIL-STD-130).

Item Management Control System (IMCS)—The IMCS creates, receives, validates, records, maintains, and distributes Catalog Management Data (CMD), Item Identification (II) data, supply management data, and other information essential to AF logistics support.

Item Unique Identification (IUID)—A system of marking and valuing items delivered to the DoD that will enhance logistics, contracting, and financial business transactions supporting the

United States and coalition troops (Ref. DFARS 252.211-7007).

Legacy Items—Items which are owned by the USAF that qualify for IUID implementation but have not been assigned and/or marked with a UII and have not been entered into the DoD IUID Registry. Legacy items may be of any condition code.

Legacy Part—Any part which is described by a legacy design, for which at least one item (instance of the part) is already owned by the USAF, and which meets the DoD IUID marking criteria. The term “legacy part” is inclusive of all parts which meet this definition, regardless of the parts’ repair/overhaul/condemnation or other support strategy.

Nuclear Weapons-Related Materiel (NWRM)—Classified or unclassified assemblies and subassemblies (containing no fissionable or fusionable materiel) identified by the Military Departments that comprise or could comprise a standardized war reserve nuclear weapon (including equivalent training devices) as it would exist once separated/removed from its intended delivery vehicle.

Part—One item, or two or more items joined together, that is not normally subject to disassembly without destruction or impairment of designed use (for example, transistor, composition resistor, screw, transformer, and gear) (Ref. MIL-STD-130 or ASME Y14.100).

Part or identifying number—The identifier assigned by the original design activity, or by the controlling nationally recognized standard, that uniquely identifies a specific item (Ref. MIL-STD-130 or ASME Y14.100).

Program Manager—Designated individual with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user’s operational needs.

Requiring Activity—A military or other supported organization that identifies and receives contracted support to enable operations.

Serialized Item Management (SIM)—A program established by the DoD whereby Military Departments and Defense Agencies identify populations of select items (parts, components, and end items); mark all items in each population with a UII as required; and generate, collect, and analyze maintenance, logistics, and usage data about each item.

Serially Managed—An item used and designated by the DoD or an Item Manager to be uniquely tracked, controlled or managed in maintenance, repair and/or supply by means of its serial number. The management of uniquely identified repairable assets, selected consumables, engines, equipment and other designated property. Includes items such as repairable assets down to and including sub-component repairable unit level; life-limited, time-controlled or items requiring records (for example, logbooks, aeronautical equipment service records, etc.); and items that require technical directive tracking at the part level.

Serial Number—An assigned designation that provides a means of identifying a specific individual item (Ref. MIL-STD-130).

Supplemental Data—Data that is encoded as Machine Readable Information (MRI) in the data matrix but is independent of the UII. Supplemental data may include data plate information such as; lot numbers, overhaul, and manufacture dates, warranty information, MFR CAGE, current part number rolls and NSNs, etc. (Ref. MIL-STD-130). See also 18S & 25S.

Technical Order (TO) —AF procedures developed or acquired for performance of organic operation, maintenance, inspection, modification, or management (exclusive of administrative procedures) of centrally-acquired and managed AF systems or commodities. TOs include paper and digital media developed to Technical Manual Specifications and Standards (TMSS), contractor-developed manuals adopted for AF use, and approved commercial-off-the-shelf (COTS) manuals. The term “Technical Order (TO)” is equivalent to the DoD term “Technical Manual (TM)”.

Tangible Personal Property—Property characterized by a physical presence and the ability to be moved as opposed to: intangible personal property such as data, software or patents and real property such as land, buildings, and fixtures attached to buildings. This is a legal term used in DoDI 8320.04 and includes Class II, V, VII, VIII, and IX.

T-1 Modification—A temporary modification that changes the configuration of an item to perform a special mission or to add/remove equipment to provide increased capability for a special mission.

T-2 Modification—A temporary modification required to support research, develop, test, and evaluation.

Unique Item Identifier (UII)—A globally unique and unambiguous identifier that distinguishes an item from all other like and unlike items. The UII is a value that is derived from a UII data set of one or more data elements (Ref. MIL-STD-130).

UII Data Set—A set of one or more data elements marked on an item from which the UII can be derived.

Wide Area Work Flow (WAWF)—A secure Web-based system for electronic invoicing, receipt and acceptance. It creates a virtual folder to combine the three documents required to pay a Vendor - the Contract, the Invoice, and the Receiving Report. The application enables electronic form submission of Invoices, government inspection, and acceptance documents in order to support the DoD's goal of moving to a paperless acquisition process. It provides the technology for government contractors and authorized DoD personnel to generate, capture, and process receipt and payment-related documentation, via interactive Web-based applications.

Attachment 2

USAF IUID DATA MATRICES AND FORMATS

A2.1. Intent. The AFMC IUID Data Matrices are required to meet OSD guidance, to guarantee uniqueness of each UII using DoD recognized IUID constructs, data elements, and formats outlined in MIL-STD-130. In order to be compliant with the DoD IUID policy unique identifying data will be encoded into a Machine Readable ECC 200 data matrix symbol in accordance with ISO/IEC 15434 syntax and semantics of ISO/IEC 15418.

A2.2. Serialization. An item's serial number is intended to uniquely identify the item as different from any other item in inventory. As defined below, AFMC will only use two serial number schemes (Ref. DoD Guide to Uniquely Identifying Items: Assuring Valuation, Accountability and Control of Government Property, Version 3.0, December 2, 2014).

A2.2.1. Part-Based Serial Numbers: Prior to IUID, serial numbers were only unique when associated with a part number. Within AFMC, the Part Serial Number generally will not change as the part undergoes configuration changes; however, it may need to be modified if it is found not to be unique, or if multiple parts of different configurations are modified to a new common configuration part.

A2.2.2. Construct #1 Serial Numbers: The serial number used in Construct #1 is guaranteed unique when used in conjunction with the Enterprise Identifier of the marking activity. The resulting concatenated number has the advantages of being independent of Part or Identifying Number changes and independent of duplications in prior serialization. **Note:** Any item with a part-based Serial Number (typically that assigned by the OEM during manufacturing) will retain that part-based Serial Number after the assigning of a Construct #1 UII. That data will be stored in the DoD IUID Registry.

A2.3. Requirement. The following specify the required IUID data matrix formats:

A2.3.1. Re-Marking: Re-marking refers to the application of a replacement label or direct mark with the 2D matrix encoding the UII previously assigned to the item. Any re-marking shall begin with a revalidation of the uniqueness of the original UII and of the association of that UII with the item to be re-marked. Any re-marking of existing items which were previously marked with a UII recorded in the DoD IUID Registry shall be re-marked with the same UII to maintain continuity of the record. The data identifier 25S shall be used for the syntax of the replacement label or direct mark. Re-marked UII shall retain all encoded supplemental data. Life cycle trending and tracking of each item requires that each UII be permanently assigned to an item and that the UII-item one-to-one relationship never be broken.

A2.3.2. Marking of Legacy Items: The Construct #1 (18S) data identifier from International Standard 15418 will be used to create all new UIIs (as of the date of this publication) applied to AFMC-marked legacy items.

A2.3.2.1. The following legacy items will not be marked with Construct #1:

A2.3.2.1.1. Re-Marking of items which were not previously marked with Construct #1, except for the 25S construct.

A2.3.2.1.2. If a part's IUID engineering instructions are controlled by a vendor drawing which specifies a data identifier other than 18S, then the

items of that part shall be assigned a UII according to that drawing. However, this case only applies if all of the following three conditions are true: (a) the USAF did not fund the drawing modification which specified IUID implementation; (b) the USAF has a written agreement with the vendor that explicitly states that the vendor accepts responsibility for the uniqueness of UIIs created by the USAF under the agreement, that specifies the part numbers covered in the agreement, and in which the vendor explicitly allows the USAF to use the vendor's enterprise identifier in the marking of those parts; and (c) the USAF and the vendor have an established method to prevent the potential duplication of marks.

A2.3.2.2. The USAF organization marking the part is typically the organization responsible for assuring the uniqueness of the Construct #1 UII. Under some circumstances (for example, in cases with nuclear related items), the organization guaranteeing uniqueness of the Construct #1 UII may be a different organization; in those cases, each organization involved must establish appropriate operating procedures.

A2.3.2.3. Air Force Ordinance shall comply with the IUID format selected by the Joint Ordinance Commander's Group.

A2.3.3. Marking of Non-Legacy Items: All new items which meet the criteria for IUID marking shall be marked using the UII format specified in the design for that part, by the contract (if the new part is being made by a commercial entity), or by the guidance of the producing service (if the new part is being made for the USAF by the Army or Navy). **Note:** All newly produced parts will be marked using the enterprise identifier (CAGE Code) of the activity that produced the part, except as described in A2.3.3.3.

A2.3.3.1. New items manufactured by the USAF shall be marked using the 18S data identifier if allowed by the part's drawing. If the drawing does not allow 18S and the USAF is the CDA, then an EO shall be made to allow marking with 18S. If the drawing does not allow 18S and the USAF is not the CDA, then USAF shall mark the item as specified in the controlling drawing; however, the mark must use the USAF producing activity's enterprise identifier. If the drawing does not allow 18S, and if it does not allow the use of the USAF producing activity's enterprise identifier, then normal waiver/deviation/EO procedures shall be used to mark the items using the 18S data identifier.

A2.3.3.2. For new parts which are produced by a commercial vendor (except in cases described in A2.3.3.3.), IUID shall be marked in accordance with DFARS 252.211-7003, Item Identification and Valuation. If any part of AFMCI 20-104 is in conflict with DFARS 252.211-7003, then DFARS 252.211-7003 shall be used in lieu of AFMCI 20-104. If the USAF contracts for a new item and if the vendor identifies a conflict between DFARS 252.211-7003 and the format of the UII specified in the item's drawing, then it is the responsibility of the USAF Acquisition Team to process EOs, Advance Engineering Supplemental Order, or waivers/deviations to correct the conflict between these requirements.

A2.3.3.3. For new parts which are produced by a small business, the USAF procuring activity may choose not to require the small business to mark the part (Ref. DoDI 8320.04). In these cases, the USAF procuring activity shall arrange for the part to be marked within

30 days of the receipt of the item. The USAF shall mark the item as it would mark a legacy item (Ref. [paragraph A2.3.2.](#)). A Determination and Findings Report must be accomplished prior to any decision concerning marking these parts.