Item Unique Identification (IUID) Enables Streamlined Acquisition And System Engineering

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Historical Methods of Identification

- Logistics and Engineering — NSN, Manufacturer and Part Number
- Property Management — Tail Number, Hull Number, Asset Tag (usually for local tracking)
- Manufacturing — Part Number, Serial Number
- Maintenance — Manufacturer, Part Number
- Tracking (regulatory and security) — Mixed
- Acquisition — Contract and Line Item Numbers and Quantity
- Finance — Fund Cite and Requisition Documents
UID Hierarchy

- Unique Identification (UID) is a system of identifying entities to distinguish them from each other.

- Item Unique Identification (IUID) is a system of marking items with Unique Item Identifiers (UIIs) that distinguish them from all other like and unlike items.

- Other efforts include:
  - Real Property Unique Identification (RPUID)
  - Acquisition Program Unique Identification (APUID)
  - System Unique Identification (SYSUID)
  - Organization Unique Identification (OUID)
    - Internal DoD (FMID)
    - External to DoD (CAGE, DUNS, etc.)
What Does IUID Provide?

Uniquely identifying tangible items will provide the “data key” to item life cycle traceability in DoD business processes and information systems and provide reliable data and accurate data, via Automatic Identification Technology (2D Data Matrix), for engineering, logistics, management, financial, accountability and asset management purposes.

Required on all new Solicitations since 1 January 2004

AND

Legacy item compliance mandatory between 2008 and 2015
“I think the industry has sold itself on a program that offers so little return that it simply won’t be worth the trouble and expense”

discussing the potential of the barcode in 1975*

*“Scanning Hits a Snag,” Progressive Grocer, December 1975, p. 47
Automatic Identification Technology

1D Barcode

Contact Memory Buttons

2-D Barcodes

Data Matrix QR Code MaxiCode

PDF417 Bullseye Aztec

Passive RFID Tags

Active RFID Tags
Marking Techniques

- Labels (Stickers)
- Data Plates
- Dot Peen
- Laser Etch
- Chemical Etch
- Silk Screening
- Thermal Spray

- Ink Jet Printing
- Laser Ablation
- Laser “Annealing”
- Cast/Forged
- Laser Bonding
- Embroidery
- Photo Etch

Compliant UII marks are optically read...so almost any marking method will work!
Key Direction from IUID Policy Updates

- Apply IUID to legacy items in inventory and operational use

- All program and item managers plan for and implement IUID
  - ACAT 1D programs submitted plans by June 2005
  - All others to MDAs by January 2006
  - All new programs must submit a plan as part of their System Engineering Plan

- Government Furnished Property (GFP) must meet IUID policy requirement effective 1 Jan 2006
  - DD 1662 for annual inventory of GFP eliminated

- Plans must address:
  - All existing serialized assets will be entered in IUID Registry
  - UII marking capabilities established such that marking can commence when equipment is returned for maintenance
Key Direction from IUID Policy Updates

- **DUSD (Logistics and Material Readiness)** develop IUID implementation plan for organic depot maintenance operations

- **Jan 2007:** OUSD Materiel Readiness & Maintenance Policy released “Implementing Item-Unique Identification in DoD Maintenance” (dated 31 Jan 07)
  - The Concept of Operations for IUID-Enabled Maintenance in Support of DoD Materiel Readiness

- **14 March 2008:** Memo Under Secretary (AT&L)
  - Policy for IUID of Tangible Personal Property – Oversight of IUID Implementation Planning and Execution

- **16 June 2008:** DoDI 8320.04 Item Unique Identification (IUID) Standards for Tangible Personal Property

- **24 October 2008:** Memo Under Secretary (AT&L)
  - Nuclear Weapons-Related Materiel (NWRM)

- **3 Aug 2009:** Under Secretary AT&L Ashton Carter, “Preservation and Storage of Tooling for Major Defense Acquisition Programs (MDAPs)”
  - Requires IUID and the planning for Preservation and Storage of Tooling for prior to Milestone C (SEP) and at Milestone C (LCSP)
IUID Policy Overview

- Policy memorandum released on July 29, 2003 (with subsequent updates) established IUID as a mandatory DoD requirement on all solicitations issued on or after January 1, 2004.
- IUID is required for all property items delivered to the Government if:
  - Acquisition cost is greater than or equal to $5,000
  - Items with an acquisition cost below $5,000, when identified by the requiring activity as DoD serially managed, mission essential, or controlled inventory
  - Items with an acquisition cost below $5,000 as determined by the requiring activity
  - Regardless of value, any DoD serially managed subassembly, component or part embedded within an item and the “parent” item in which it is embedded
- Wide Area Workflow (WAWF) is the preferred method for capturing IUID data and is the mandatory DoD invoicing system
Create and Generate the UII

The components that make up the UII are identified in the table below. Each enterprise has two options for creating the UII.

<table>
<thead>
<tr>
<th>Based on current enterprise configurations</th>
<th>UII Construct #1</th>
<th>UII Construct #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>If items are serialized within the Enterprise</td>
<td>Issuing Agency Code* Enterprise ID Serial Number</td>
<td>Issuing Agency Code* Enterprise ID Original Part Number / Lot or Batch Number Serial Number</td>
</tr>
<tr>
<td>UII is derived by concatenating the data elements IN ORDER:</td>
<td>Data Identified on Assets Not Part of the UII (Separate Identifier) Current Part Number** Other Traceability Number***</td>
<td>Current Part Number ** Other Traceability Number ***</td>
</tr>
</tbody>
</table>

*The Issuing Agency Code (IAC) represents the registration authority that issued the enterprise identifier (e.g., Dun and Bradstreet, EAN.UCC). The IAC can be derived from the data qualifier for the enterprise identifier and does not need to be marked on the item.

** In instances where the original part number changes with new configurations (also known as part number roll), the current part number may be included on the item as a separate data element for traceability purposes.

*** The data identifier 30T has been designated for use as a traceability number that is not part of the UII. For example, applications may specify 30T for encoding lot or batch number when the lot or batch number is not required or desired in the UII.
Create and Generate the UII

BUSINESS RULES

The UII shall be derived from its discrete component data elements.

The UII is not required to be marked on the item as a separate data element.*

1 This example uses Text Element Identifiers

2 This example uses MH10.8.2 Data Identifiers.

*If the enterprise chooses to mark the UII as a discrete data element on the item, the component data elements must also be marked on the item as discrete data elements, in addition to the UII.
System Engineering Requirement

- AT&L Memo-Implementation Planning & Execution 14 March 2008
  - System Engineering Plan
    - Describe overall IUID Implementation Strategy to include
      - Requirements Generation
      - Marking
      - Data Submission
      - Describe role of IUID in program sustainment strategy
    - List Metrics
    - Implementation Timeline
  - Life Cycle Supportability
    - Property accountability & management and financial accounting enabled by IUID
    - Incorporate capability to use IUID in all new Automated Information Systems (AIS) used for management of property

- DODI 5000.02 “Operation of the Defense Acquisition System, 2 December 2008
  - IUID Implementation Plan required per DoD Instruction 8320.04
    - Milestone A (summarized in SEP)
    - Milestone B (annex to SEP)
    - Milestone C (annex to SEP)
UID of Items Enabled Intensive System Life Cycle Management

- Financial Management
- Warranty Management
- Tracking Item Performance
- Failure Analysis
- Reliability Improvement
- Engineering Design Analysis
- Maintenance Productivity
- Supply Productivity
- Safety
- Accountability
- Automated Data Collection
- Machine-Readable Marking

Source: Study Draft 0.7 NATO Allied Publication AUIDP-1
Systems Life Cycle Management View

- UII is one of the “common data keys” needed for System Life Cycle Management to link item level data and information across multiple systems and owners.
- Comprehensive UII visibility from “as–built” configuration through distribution and deployment process to item configuration at disposal.
- Existing mandated tracking uses UII as a common approach across all in scope platforms.
  - Tracking via serial numbers is not new (e.g. Flight Critical Safety Items, controlled items, serially managed).
  - Individual systems or reporting requirements generate “point” solutions that do not encourage common usage.
- Supply Chain Management decision making using UIIs.
- Complete lifecycle traceability.
- Common data exchange formats virtually eliminate translation requirements.
Just Imagine the Systems Benefits Possible with:

- Fully defined Product WBS at all points during the lifecycle to which:
  - Operational, maintenance and reliability data can be associated
  - Failure data can be assigned at the item level
  - Operational planning can reduce logistics tail and target skills

- The change in culture with data that:
  - Reliable and Accurate
  - Used to pull authoritative data from databases to pre-populate work orders, requisitions, PQDR, SDR
  - Labor savings associated with automatic data capture
Online Resources
Official DoD UID Policy Office Website

www.uniqueid.org
Comprehensive resource of UID and IUID policies, standards, directives, videos and success stories.
Be sure to sign up for the IUID in Action eNewsletter!

IUID Helpdesk
defensepolicysupport@ebpsc.org or 1.877.376.5787

Defense Acquisition University
www.dau.mil
DAU offers 2 distinct online courses to increase your IUID knowledge
CLE040 “Item Unique Identification Marking” and CLM200 “Item Unique Identification”
Back-Up Slides
DoD IUID Registry

Purpose:
- Collect IUID and pedigree information of tangible items owned by DoD
- Distribute IUID and pedigree information to DoD users
- Provide single point of reference for DoD tangible items that have assigned Unique Item Identifiers

Operational Environment:
- IUID Registry – database located in Battle Creek, MI
- Operated by Defense Logistics Information Service (DLIS)
- Resides on Business Process Network backbone

Submit Data
- By WAWF
- XML or flat file through GEX
- Manually via IUID Web Entry Site at http://www.bpm.gov/iuid

Rapidly Growing!
DoD IUID Registry Statistics
as of 30 September 09

- 7,650,056 Items registered
- 5,474,069 New items
- 2,175,987 Legacy
- 1,687 Contractors have delivered new UIIs
- 990 of the contractors (59%) are small businesses*
- 1,520,434 of the new items (28%) are from small businesses*
- Growth rate of over 49,000 new UIIs/week**
- 340,849 Items are in GFP status

* Based on current size status in CCR
** Legacy and GFP UIIs often come in large batches and weekly rates for those are not meaningful
The category “Prime Contractors” was previously counting Prime Identifiers. The number has been adjusted to accurately reflect the number of unique businesses submitting UII to the Registry.