

Making a Difference for Asset Visibility, Management, and Accountability

James I. Finley

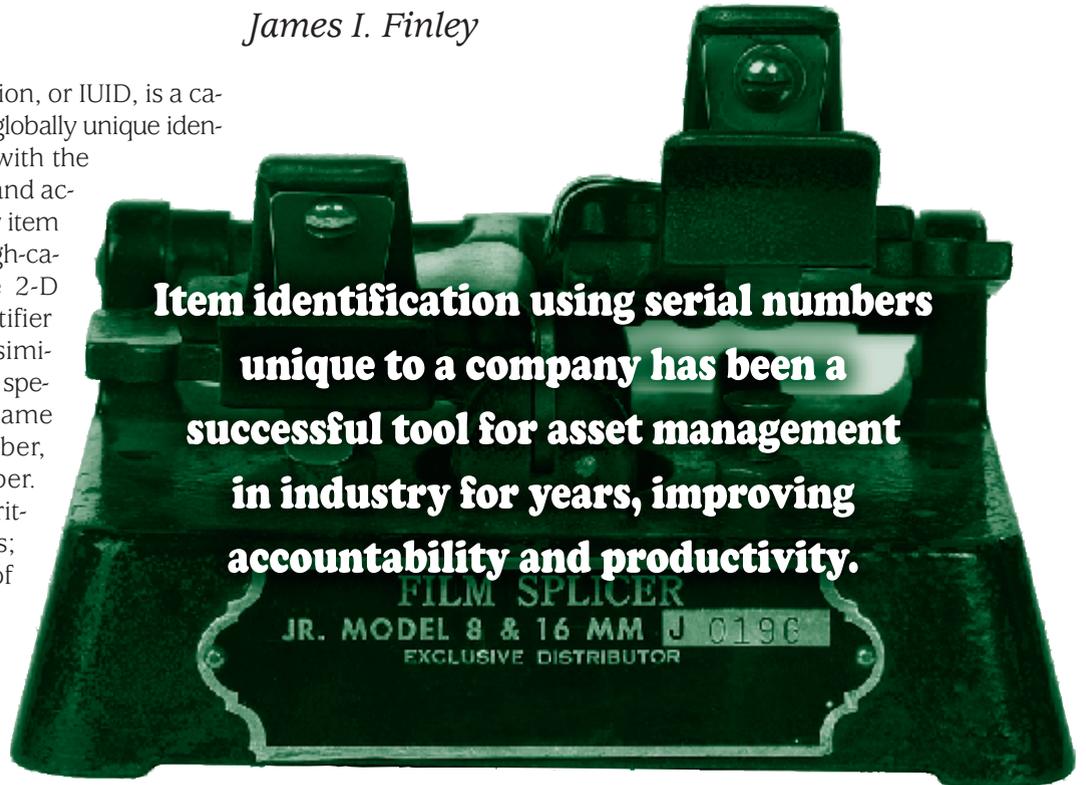
Item Unique Identification, or IUID, is a capability that requires a globally unique identifier for items, along with the ability to consistently and accurately distinguish any item from another by using high-capacity machine-readable 2-D marking. The unique identifier distinguishes not only dissimilar items, but also identifies specific items that have the same manufacturer, part number, and National Stock Number. The NSN is valuable and critical for consumable items; however, for Department of Defense serially managed assets, IUID provides permanent, lifetime item uniqueness.

Item identification using serial numbers unique to a company has been a successful tool for asset management in industry for years, improving accountability and productivity. One example of a successful sector-wide commercial item identification system is the Vehicle Identification Number, introduced in 1980 to uniquely identify vehicles. Today, every single car sold in the United States has a VIN number that allows it to be accurately tracked and identified.

For years, such companies as Dell and Hewlett-Packard have incorporated item identification systems into their products with great success, improving customer relations and reducing costs associated with life cycle asset management. Wal-Mart recently extended the concept of asset management, integrating Radio Frequency Identification into supplier packaging requirements to enhance efficiency in stocking and inventory control.

The Department of Defense is taking successful item identification tactics a step further with IUID by using 2-D

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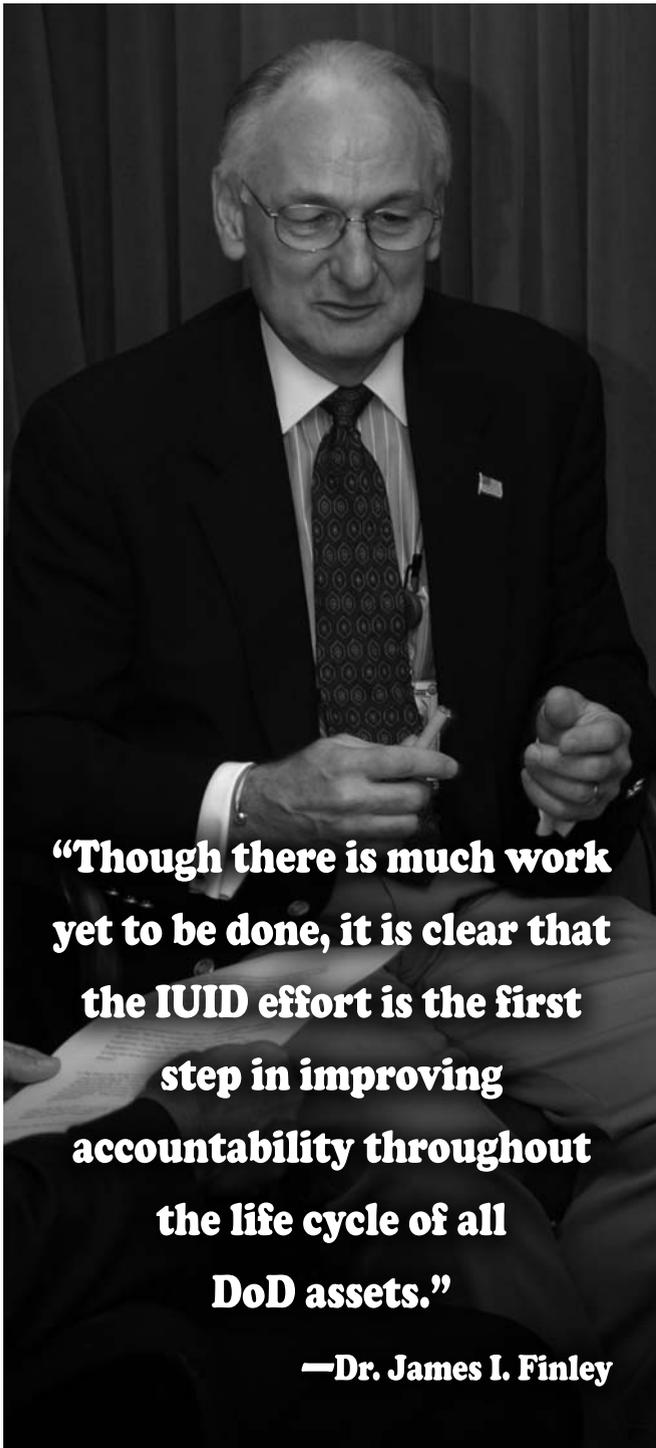
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marking and automatic data capture to establish permanent, globally unique identification to identify, track, and manage individual DoD assets throughout their life cycle.

IUID Implementation at the DoD

IUID was made mandatory for all new DoD acquisitions beginning Jan. 1, 2004. On Dec. 23, 2004, the requirement was expanded to require all acquisition and sustainment programs to develop an evolutionary approach to IUID for all existing items in inventory, property in the possession of contractors, or items already on contract.

The implementation progress has been substantial; there are currently more than 1 million items registered in the DoD's IUID Registry, and the rate of entries continues to increase. I believe that IUID provides a positive return on investment and will significantly improve the way we do business in the Department. As we are better able to track our equipment throughout its life cycle, we will not only better manage existing equipment, but also better plan for the future.



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IUID is Essential to the Department

IUID is an essential effort for the DoD. The consistent and accurate identification of items will facilitate item tracking throughout each item’s life in DoD business systems. The result will be reliable and accurate data for program management and accountability purposes that will also be vital to engineering, acquisition, financial, property, plant, and equipment accountability, maintenance, and logistics processes. The goal is to accomplish this while engaging actively with the international standards and commercial item markings communities to ensure they

can support IUID marking and data capture requirements. IUID will facilitate integration of item data across DoD, federal, and industry asset management; improve item management and accountability; improve asset visibility and life cycle management; and enable clean audit opinions on item portions of DoD financial statements. An example of how IUID is becoming an integral part of DoD business processes can be found in DoD Instruction 4151.19, “Serialized Item Management (SIM) for Materiel Maintenance,” signed by Ken Krieg, USD(AT&L) on Dec. 26, 2006. This instruction states that all programs shall facilitate the effective management of populations of select items (parts, components, and end items) throughout their life cycle using data associated to an item by its Unique Item Identifier (UII). Data about the maintenance, logistics, and usage of each specific item will then be collected and analyzed.

Another ongoing effort under the unique identification initiative is the Real Property Unique Identifier, or RPUID, which will uniquely identify all parcels of land and all real property facilities in which DoD has a legal interest. RPUID serves as the “key” to link any real property asset with related information from different sources throughout DoD. For example, by using an RPUID, data from a financial system can easily be linked to asset information in the core asset management system, making it possible to improve financial accountability. The RPUID will also enable the linkage of real property to personnel, personal property, and environmental systems. This will improve the accuracy and reliability of information while reducing costs because data will be entered once and shared throughout the DoD. Because of commonality under the UID initiative, data collected using RPUID, IUID, and other UID implementations will be interoperable.

Complying with IUID Requirements

To the maximum extent practical, the Department embraces the current methods used among suppliers, including commercial practices; doing so is in the Department’s best interest and the best interest of coalition partners and industry. The UID policy development effort has involved the international community, international standards bodies, and industry. The Department continues to collaborate with these stakeholders on implementation issues. The Department is internally guided by the need for the integration of efforts across the acquisition, financial, and logistics domains. My staff has directly participated in 20 integration projects executed by the Services to develop IUID capabilities at multiple levels within the Department and is actively pursuing broader international acceptance through NATO, the International Standards Organization, and other international bodies.

The Naval Air Headquarters at Patuxent River, Md., has teamed with Army Aviation at Redstone Arsenal, Ala.,

IUID Policy Update, February 2007

On Feb. 6, 2007, USD(AT&L) Ken Krieg issued a memorandum addressing updated IUID policy and guidance.

"We have achieved tremendous progress; for example, IUID requirements are now included in the DoD financial improvement and audit readiness plans, but we need to sustain momentum toward achieving paperless management of property in the possession of contractors in FY 2007 and furthering depot planning and implementation," said Krieg in the memorandum.

"Secretaries of the Military Departments and Directors of the Defense Agencies and Field Activities should lead IUID implementation for both newly acquired and legacy items currently in inventory or operational use," he directed. "Component officials leading engineering, logistics, finance, acquisition, operations, information systems, and procurement must be accountable for success. Commanders of Systems and Materiel Commands and Centers should aggressively require marking of equipment and ensure contract compliance to enable use of the unique item identifier."

The Additional Item Unique Identification Guidance states that: "For uniquely identifying legacy items, a phased approach should be considered in accordance with USD(AT&L) memorandum dated December 23, 2004, which is accessible at

< www.acq.osd.mil/dpcap/UID/policy.htm >.

The prioritized list of legacy assets for addition into the IUID registry is also available on the UID Web site at < www.acq.osd.mil/dpcap/UID/ >. Phase I legacy assets must be entered into the IUID registry no later than September 30, 2007; Phase II no later than September 30, 2008; and Phase III no later than September 30, 2009."

The link to the complete text of the under secretary's memorandum and guidance can be found at < www.acq.osd.mil/dpcap/UID/attachments/2007-0527-ATLcomplete.pdf >.

and Sikorsky Aircraft Corporation to pilot the adoption of the international standard ISO 10303, "Standard for the Exchange of Product Model Data," Application Protocol 239, commonly referred to as Product Life Cycle Support (PLCS).

Today's digital systems at Sikorsky and NAVAIR are incompatible. Basic SH-60 aircraft delivery data are pro-

vided to the Navy on paper. Five full-time staff manually transcribe and load the data into the Navy's NALCOMIS - OOMA maintenance management system over a two-week period. The ISO 10303, AP 239 PLCS pilot effort demonstrated digital data transfer in a matter of a few minutes, requiring little or no human intervention. The successful pilot compelled us to extend the tool to a more robust production effort that can readily proliferate to other DoD and contractor users.

A data exchange standard based on PLCS was developed and used to transfer delivery, maintenance, and configuration data among maintenance management systems. As the Department embraces industry-provided sustainment support, effective sharing of maintenance actions becomes critical. The PLCS effort provides a common data standard by which various identification systems can communicate. The marking and registration of 97 million items within DoD is a daunting task, but with the thousands of business, financial, maintenance, and supply systems in the Department, there is a significant opportunity to eliminate repetitive, duplicative efforts. The results of the PLCS data standardization pilot will be used to demonstrate where the ISO 10303 standard is beneficial and should be considered for broad, if not Department-wide, adoption. Initial results from pilot work last year are compelling, and a more production-orientated effort is under way in FY07.

All acquisitions executed through the Department now require IUID, including all international and foreign military sales. A pilot project under way with the Navy International Programs Office is using IUID to track sensitive munitions sold to international partners, from the factory to destinations, and to improve end-use monitoring of those items during their service life. The Department now expends a great deal of human resources conducting inventories associated with overseas end-use monitoring of these items. IUID offers the potential to dramatically reduce the labor involved and will also increase our confidence in the effectiveness and accuracy of those inventories.

Dr. Delores Etter, assistant secretary of the Navy for research, development and acquisition, sees great value in the use of IUID. "We are in an environment that demands cost-wise readiness. This isn't about compliance; rather it's about finding better business methods for providing that readiness. IUID can do that by improving the ability to track our assets."

Benefits of IUID within Depot Operations

The Marine Corps Maintenance Depot in Albany, Ga., has improved operations within its product lines as it converts its systems to use IUID and the 2-D data matrix. Ongoing projects within the maintenance depots are establishing the ability to exploit IUID to mark, identify, record,



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and track items inducted into the depots for maintenance. The depot is implementing IUID using commercial off-the-shelf IUID solutions to accelerate internal capabilities, while benefiting from the insight of Department personnel. Initiatives began with a marking program for one of the cranes used in the field. In addition to improved asset visibility, adapting the data plates to include the data matrix had unanticipated benefits: reduction of manpower and elimination of hazardous waste. For years, a labor-intensive photo chemical process containing benzene had been used to mark the identification plates. Using a CO₂ laser to add the IUID information and the data matrix to the plate reduces the job from hours to minutes and eliminates the use of a hazardous material.

Ultimately, the inherent efficiencies of IUID and Automatic Identification and Data Capture (AIDC) will give the

Marine Corps the ability to refocus personnel to other critical duties. The impact to the warfighter is very positive—changing processes to exploit automatic data-capture technology instead of manual data entry. The benefits to the sustainment community are improved usage predictions, accurate part history, and enhanced reliability analysis. Use of IUID and AIDC will ultimately result in improved manpower efficiency related to inventory control, greater data integrity, and increased readiness of weapon systems.

Maj. Gen. Willie J. Williams, commanding general, Marine Corps Logistics Command, said, in his opening remarks at the January 2007 IUID Depot Maintenance Customer Day in Albany, “ IUID goes beyond part marking. IUID is critical in managing the DoD enterprise end-to-end logistics chain management in that it provides logistics data that become logistics intelligence.”

Service Progress in Registering Legacy Items

Over 240,000 legacy items had been registered through the first quarter of FY07. Under Etter’s leadership, the Department of the Navy—with over 130,000 UIIs registered—has taken the lead to identify opportunities to implement IUID. “We have many unique situations and challenges with implementing IUID. The pilot programs under way at our depots and warfare centers are critical. They will help us better understand the magnitude of the effort required and find efficient ways of completing the task,” she says.

During the last quarter of 2006, the number of accepted Navy UID program implementation plans increased by more than 150 percent. Etter committed the Navy to completing all its 251 UID program implementation plans by the end of the second quarter FY07. The Air Force leads in percentage of expected plans that have been accepted, and the Army continues to have the largest number of total IUID (legacy-plus-new) records. The overall DoD UID program plan effort is 45 percent complete, with 363 UID implementation plans as of November 2006.

Industry Response

Industry suppliers have responded favorably to DoD’s IUID requests. There continue to be presentations at forums by National Defense Industry Association and Aerospace Industries Association (AIA) member companies like Lockheed Martin, Pratt & Whitney, Honeywell, Rolls-Royce, Sikorsky, and Boeing, explaining how they have gained value from IUID. These companies present information describing how automatic identification technology reduces costs through improved data quality and enhanced quality control during product planning, development, life cycle, and inventory control. The AIA has developed a common supplier flow-down requirement to further expand IUID use as the single identification across industry and DoD for supply-chain management.

Many defense industry suppliers identify IUID as the single best practice for item management across the corporate spectrum for both commercial and government business. This forward thinking is particularly true in the aerospace industry where IUID-compliant marking is an accepted equivalent to existing Air Transport Association marking requirements.

There are many examples of primarily commercial suppliers who have successfully delivered IUID-compliant items. Hewlett-Packard and Dell are excellent examples in the information technology sector. Both organizations are delivering hardware with permanent asset labels that comply with IUID marking requirements. The labels are easily produced at a low cost and can be read by portable imaging devices supplied to members of IT staff. The imagers are tethered to computers and able to download the contents of the mark. The IUID-compliant labels benefit both the government and the manufacturer in asset management. In creating the permanent asset label, HP was able to embrace the DoD approach and comply with international standards by using its own serialization to create the unique item identifier. This approach is in stark contrast to fragmented customer requirements to apply company-unique tags that offer little or no direct value to HP. The DoD approach allows HP to capitalize on existing internal processes and provides greater value from post-sale customer data.

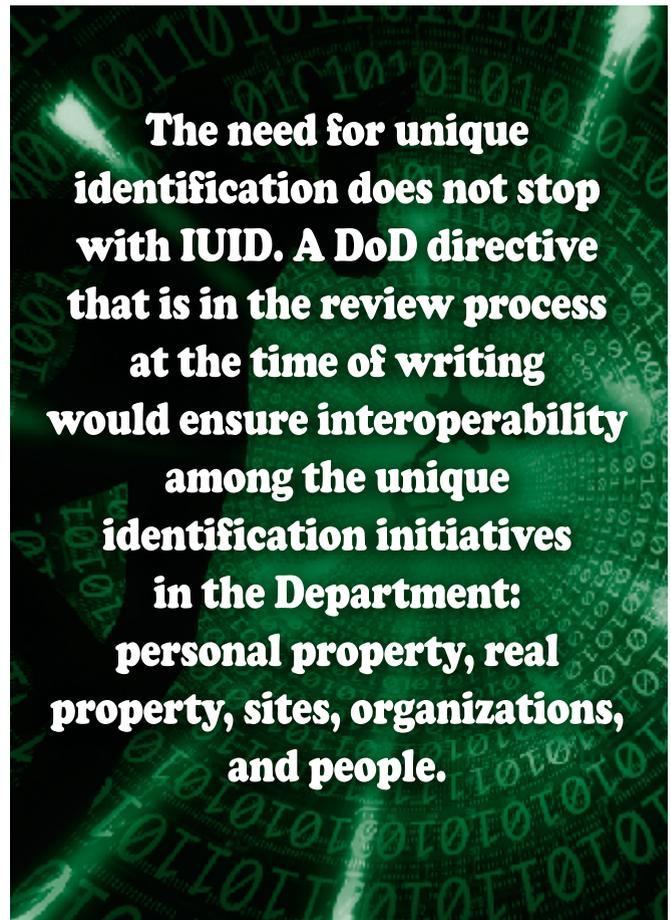
IUID capabilities in commercial organizations improve operations and speed processes, while increasing accuracy. The global speed of competition has demanded tools, like IUID, that accelerate commercial capabilities. IUID can enhance competitive readiness, reduce costs, and increase reliability. It is the goal of the Department to bring these same benefits to the warfighter.

The impact of the IUID initiative has been positive among the small-business community as well, in part, because of the array of low-cost products and service providers. Training materials have been readily available, and the Procurement Technical Assistance Centers have added IUID training to their outreach efforts to small businesses. This support and the straightforward IUID requirements have resulted in small business accounting for more than half of the total businesses that have delivered compliant items to the IUID Registry.

IUID has also increased business opportunities for many small businesses by generating a demand for equipment and services to support the marking and reading of the IUID mark along with the capture and exchange of data among both internal and external business applications.

Continuing Efforts

The need for unique identification does not stop with IUID. A DoD directive that is in the review process at the



time of writing would ensure interoperability among the unique identification initiatives in the Department: personal property, real property, sites, organizations, and people. Each of these initiatives would be further delineated in a set of companion DoD instructions or other issuances. The Navy also established a cross-functional executive leadership group to ensure that the implementation of the directive and instructions provides a cohesive application of the basic principles of unique identification. This implementation standardization is critical to the improvements in business processes sought by the Navy.

Though there is much work yet to be done, it is clear that the IUID effort is the first step in improving accountability throughout the life cycle of all DoD assets. By integrating commercial best practices for asset management, the Department can capitalize on years of industry asset identification knowledge, technology, and experience to maximize the potential for savings through efficiency and accountability.

For more information on IUID, visit <www.acq.osd.mil/dpap/uid>.

The July-August issue of Defense AT&L will feature IUID success stories.