

Product Manager Joint-Automatic Identification Technology to Offer Item Unique Identification Services

LTC Cary Ferguson and Paul Krumhaus

The U.S. Army's Product Manager Joint-Automatic Identification Technology (PM J-AIT), an office within Program Executive Office Enterprise Information Systems at Fort Belvoir, VA, has announced that it will offer Item Unique Identification (IUID) technical assistance to Army activities.

Here is an IUID mark that failed during a 1-year *Operation Iraqi Freedom* rotation. (U.S. Army photo by Shawn Baker, Aptus Global Inc.)



IUID is a DOD program involving the marking of items requiring life-cycle traceability with machine-readable Unique Item Identifiers (UIIs), which distinguish the items from all others. Launched in 2003, the IUID program is tasked with marking and registering more than 60 million DOD items by 2015. Once a critical mass of items is uniquely identified, the UII can be used to generate value in business processes. Major benefits will begin to accrue within the Army upon the fielding of the Single Army Logistics Enterprise, which will be enabled to use the UII.

“Our goal is to be the go-to organization supporting Army implementation of IUID,” said LTC Cary Ferguson, PM J-AIT. “We’ve been deeply involved in IUID implementation since 2003 and have a track record of providing solutions for our customers’ IUID challenges, large and small. We have been in the IUID education business since 2004, and, in 2005, PM J-AIT wrote and recorded the first IUID instructional video used by the Defense Acquisition University.”

As the Army’s mandatory source of the AIT marking and reading technologies required for IUID implementation, the PM office is now standardizing the support services it has provided for the past 7 years, offering non-reimbursable IUID support services to Army customers.

There are three Army communities involved in IUID implementation that the PM J-AIT can assist.

Enterprise Information Systems

These systems will provide the ability to gather and exploit life-cycle event data, using the machine-readable UII. For this community, PM J-AIT is the source of the AIT imagers and hand-held terminals enabling error-free data transfer.

The Property Book Unit Supply Enhanced system is one of the first major Army logistics systems to be

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IUID-enabled; more than 13,000 hand-held terminals capable of reading the data matrix symbol containing a UII have been acquired through PM J-AIT contracts and are being fielded. The exploitation of IUID by Army systems will become pervasive in 2015, following the fielding of the Global Combat Support System-Army.

“The Army was looking for early victories that would demonstrate the business case for IUID,” said Tom Rigsbee, Chief of AIT Synchronization. “In 2007, we were able to partner with the Army’s Aviation and Missile Research, Development, and Engineering Center in a multiyear Army Aviation AIT insertion project. This includes the use of IUID to improve business processes, with focus on the 160th Special Operations Aviation Regiment. AIT-enabled systems using IUID were developed to provide Soldiers using Unit Level Logistics System-Aviation Enhanced with a wireless way to conduct an inventory.

“Systems were developed to manage tools, Organizational Clothing and Individual Equipment [OCIE], and Aviation Life Support Equipment [ALSE], producing dramatic reductions in the time required for issue, receipt, and inventory, plus significant improvements in accountability and data integrity.” The project developed a number of exportable applications that provide major improvements in accountability and cost avoidance, including Tool Room, OCIE management, Arms Room management, and ALSE management.

Army Acquisition Community

The host of items accepted by the Army will be delivered by the supplier marked with machine-readable data matrix marks encoded with UIIs. To accomplish that, decisions must be made relative to what requires IUID; where the mark should be placed; how the mark is made to meet military-standard durability requirements; how to ensure that data are correctly encoded in the mark; and how to ensure the quality of the mark and that the UII is properly registered. There are many potential points of failure.

“We have fielded a lot of questions relative to marking,” said Paul Krumhaus, PM J-AIT’s IUID subject matter expert. “One recurring question, based on a recurring problem, has been how a program management office could ensure that a supplier was correctly encoding the UII in the data matrix symbol; incorrect encoding results in a useless mark. Our answer was to craft a solution wedding a \$495 imager from our AIT-IV contract with the U.S. Navy (USN) Quick Compliance Tool Suite. The result was that an individual with a computer with Web access can check both whether the data are correctly encoded and whether they are registered in the DOD IUID Registry.” (See http://www.ait.army.mil/technology/iuid_registry.html for more information on the IUID validation and registry check.)

Program managers are required to submit to the Assistant Secretary of the Army for Acquisition, Logistics,

and Technology and to annually revise IUID implementation plans reflecting how they will ensure marking and registration of both new and legacy items that require IUID. PM J-AIT has reviewed more than 160 of those plans and provided recommendations to improve most of them. “It can be a real time saver if the persons charged with developing those plans give us a call when they have questions,” said Krumhaus.

U.S. Army Materiel Command Elements

U.S. Army Materiel Command (AMC) is responsible for selecting trigger events for marking that will meet the goals of the Army IUID Implementation Plan. This is perhaps the most difficult IUID implementation task. The primary

trigger is a maintenance event, when the item is out of service and marking and registration can be accomplished within the maintenance process. In many cases, however, marking and registration to meet the Army IUID Implementation Plan goal cannot be accomplished solely by rotating items through scheduled maintenance; additional strategies must be used.

Approximately 85 percent of Army legacy items requiring IUID have a

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data plate or label and can be IUID-marked by adding a data matrix to, or next to, that plate or label. The activity designated to do the marking can make the label or purchase it pre-made. The Army Plan calls for a business case analysis of alternatives before making the often large capital investment in marking equipment. If marking equipment is to be purchased, it will probably be available from PM J-AIT’s AIT-IV contract, with pre-competed prices, industry-best warranties, and after-sale 24/7 help desk service.

The other services are faced with the same types of IUID implementation challenges as the Army. PM J-AIT maintains a focus on the solutions developed by the USN, U.S. Marine Corps (USMC), and U.S. Air Force (USAF) and sharing them with Army customers facing similar challenges.

The more cost-effective way to obtain labels and data plates is to buy them pre-made. The USAF, for example, has put in place an Enterprise Barcode Service contract to supply pre-made labels and data plates and registration services to all DOD customers. The Army offers a similar service based at Letterkenny Army Depot, PA. For Army customers needing labels or plates, PM J-AIT can recommend options for purchasing equipment or pre-made labels.

Military Standard-130 requires that the mark containing the UII last the life cycle of the item or up to the point of rebuild. Achieving this durability requires the right material and the right adhesive. Durability in the label or plate material and adhesive depends



Chad Sims, Contracting Officer's Representative for the AIT-IV contract, evaluates the ability of a handheld terminal on the AIT-IV contract to read a direct part mark. (U.S. Army photo by Paul Krumhaus.)

IUID BASICS

1. Assign an item a globally unique identification number.

“Super Serial #”

Unique Item Identifier (UII)

2. Apply a permanent machine-readable mark to the item, containing that globally unique identification number.



Machine
Readability
Enables Error-Free
Data Transfer

3. Register that identification number in a central database, linking it to pedigree data about that specific item, such as cost, manufacturer, part number, date acquired, etc.



4. Use that globally unique identification number for life-cycle management of the item.

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Over the next several years, use of the serial number to uniquely manage items will transition to use of the globally distinct UII.

on the surface and the environment to which it will be subjected. If the label or plate is mounted to a surface coated with Chemical Agent Resistant Coating, for instance, the choice of adhesive is critical.

PM J-AIT's Small Arms Use Case Demonstration discovered problems with labels used on small arms and some accessories. The discovery was made Nov. 9–10, 2009, when Aptus Global Inc. photographed and began evaluating the data matrix marks on two company-sized units' equipment that had returned from a 1-year *Operation Iraqi Freedom* rotation. PM J-AIT followed up by requesting that an additional impact test be added to a USN label testing project, with results expected in December 2010. PM J-AIT will disseminate the test results when they are released.

Additionally, technical engineering support services from PM J-AIT's AIT-IV contract can be used to evaluate existing marking decisions or obtain custom solutions from labeling experts.

“Between the technical expertise we have in-house and that accessible through our AIT-IV contract vehicle, we can generate a solution for almost any IUID marking or reading-related problem,” said Ferguson.

PM J-AIT is a 1-stop shop with answers to IUID questions and assistance to Army organizations in identifying cost-effective approaches for IUID implementation. There is no cost to the unit or organization for standard services; atypical services, however, may require a Memorandum of Agreement or similar arrangement. Army organizations may contact PM J-AIT at

PMJAIT-PEO-EIS-IUID@us.army.mil
or (703) 339-4400, ext. 123. For more information on PM J-AIT, go to **www.ait.army.mil**.

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PAUL KRUMHAUS is a CALIBRE support contractor serving as the IUID subject matter expert in the office of the PM J-AIT. He holds a B.A. in economics from California State University, Sacramento.