



SOLE SOURCE



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The Editor's Corner

By Dr. Michael E.
Harris, C.P.L. -
Editor-in-Chief



Well, here I am again – publishing a special issue of the Garden State SOLE Chapter newsletter. I have one topic for this issue – UID/RFID.

The first article is from the January–February 2004 issue of *Defense AT&L*. Michael W. Wynne is the acting under secretary of defense for acquisition, technology and logistics. Previously, he served as principal deputy under

secretary of defense for acquisition, technology, and logistics.

The second article is from the January–February 2004 issue of *Defense AT&L*. This is the basics; I have included the figures because they really do help.

I took the third article from the March-April 2005 issue (Volume 37 Issue 2) of *Army Logistician*. Jeffrey D. Fee is an action officer at the Army Logistics Transformation Agency at Fort Belvoir, VA. Alan Schmack is a logistics management specialist at the Army Logistics Transformation Agency at Fort Belvoir, VA.

This last article is from the May-June 2005 issue of *Defense AT&L*. This makes a strong connection between RFID and UID. Alan Estevez is assistant deputy under secretary of defense, supply chain integration.

INTERVIEW WITH MICHAEL WYNNE, ACTING UNDER SECRETARY OF DEFENSE (ACQUISITION, TECHNOLOGY & LOGISTICS)

Unique Identification (UID) Now Mandatory on All New Solicitations

On July 29, 2003, Wynne, acting under secretary of defense (acquisition, technology and logistics), announced a new policy for the unique identification of items that the Department of Defense (DoD) buys. Rob Leibrandt, deputy, Unique ID office and DAU liaison to the Office of the Secretary of Defense (OSD), interviewed Wynne for *Defense AT&L*. In the interview, 2007_UID-RFID

Wynne expressed his conviction that UID will enhance engineering, logistics, contracting, and financial business transactions supporting U.S. and coalition troops. He explained how, through the new policy, DoD can consistently capture the value of items it buys, control these items during their use, better evaluate technical performance, and combat counterfeiting of parts. According to Wynne, UID is a business imperative for the Department, which has hitherto been without a universal method for parts identification.

Q. *What is a unique identification?*

A. Basically, unique identification, UID, is the ability to physically distinguish one item from another. Even though the items may be exact

copies of each other, the unique identifier can be used to distinguish between them. We view a unique identifier as a set of data for assets that one, is globally unique and unambiguous; two, ensures data integrity and data quality throughout life; and three, supports multi-faceted business applications and users.

Q. *Why is unique identification important to DoD?*

A. Unique identification is a business imperative for the Department, which has been without a universal method for parts identification. Our vision for UID is to facilitate item tracking in DoD business systems and to provide reliable and accurate data for program management and accountability purposes in our engineering; acquisition; financial; property, plant and equipment accountability; and logistics processes. Our goal is to accomplish this while relying to the maximum extent possible on international standards and commercial item markings and not imposing unique government requirements. Unique identification of items will help achieve 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.

Q. *What has been the approach for defining unique identification?*

A. Following the first organized UID offsite in December 2002, I directed the establishment of an integrated product team (IPT) to lead the effort in defining the requirements for a UID policy and implementation. We have been most fortunate to have the dedicated participation and support of folks from the military services and OSD and that of our industry partners, associations, and international defense partners. This has truly been a demonstration in coordination and collaboration to ensure UID brings about positive transformation within the international defense supply chain.

Q. *How do you identify an item as unique?*

A. First, I would point out that UID is a mandatory requirement for all DoD solicitations issued on or after January 1, 2004. The focus of this requirement is on new equipment, major modifications, and re-procurements of equipment and spares. We felt this was the most logical place to begin because it is easier to mark parts at the source of procurement—the manufacturing enterprise (that is, the prime contractor and vendor).

We are relying on current commercial practices to uniquely identify items that an enterprise produces. Unique identification depends upon a combination of data elements that is determined by how the enterprise serializes items. For UID there are two acceptable methods of serialization. The first is serialization within the enterprise identifier, whereby each item is assigned a serial number that is unique among all the items identified under that enterprise identifier and never used again. We look to the enterprise to ensure unique serialization within the enterprise identifier. The second is serialization within the part number, when each item of a particular part number is assigned a unique serial number within the original part number assignment. Again, we look to the enterprise to ensure unique serialization within the original part number.

Our DFARS interim rule on unique item identification and valuation was published in the *Federal Register* on October 10, 2003. One provision of the rule is for our contracts to include a requirement for commonly accepted commercial marks if it's determined that unique item identification or a DoD-recognized unique identification equivalent isn't required and that unique item identification isn't already marked. In these cases where it's not necessary to distinguish between individual items of a product, commercial marks could be used. These are such identifications as the global trade identification number (GTIN)—the most widely known being the universal product code (UPC)—the COMMON LANGUAGE® equipment identification (CLEI) for telecommunications equipment, and the Health

Industry Business Communications Council (HIBCC) code for non-pharmaceutical health care products.

We will also accept existing equivalent unique identifiers used in the commercial marketplace, provided that they meet our criteria for uniqueness. Thus far, we have identified three such identifiers for our use: the global individual asset identifier (GIAI), the global returnable asset identifier (GRAI) and the vehicle identification number (VIN). In addition to these equivalents, the data requirements of Title 14 CFR Part 45, Identification and Registration Marking, for aircraft, aircraft engines, propellers, and propeller blades and hubs are consistent with our UID constructs. Although it is not yet in widespread use, we do anticipate that the newly developed electronic product code (EPC) will provide us with another equivalent.

While items currently in use and in our inventories are not immediately affected by the policy, I have encouraged the component acquisition executives (CAEs) to identify, promote, and fund pilot programs to apply UID to legacy equipment and the supporting automated information systems. One notable example of legacy application of UID is the Army's effort in marking flight and maintenance critical parts on the CH-47 Chinook helicopter. I realize it will be a long road to implementation, but the sooner program managers (PHs) begin to plan for UID implementation and its effects on business processes, the smoother the transition will be.

Q. *In the policy memo, you impress upon the CAEs the need to ensure that program managers understand the criticality of requiring UID. What do you feel will be the impact for PHs and their related functional support disciplines?*

A. We should all understand that the UID policy is intentionally broad in reach and will affect stakeholders throughout the supply chain. As I see it, the principal stakeholders are program and item managers and their supporting functional disciplines of engineering; acquisition; financial management; property, plant, and equipment

accountability; and logistics. Further, we have our industry counterparts in these areas to consider as well.

We expect UID to have the following outcomes:

- Engineering will provide for the seamless transfer of product data (specifications or bills of material) into the supply chain to allow for faster production ramp-up and to speed up engineering change processes.
- Acquisition will provide for establishment of requirements and the efficient capture of the UID data elements through the contracting process.
- Financial Management will provide clean audit opinions on item portions of DoD financial statements.
- Property, Plant and Equipment Accountability will provide physical controls and accountability over tangible items to reduce the risk of undetected theft and loss, unexpected shortages of critical items, and unnecessary purchases of items already on hand.
- Logistics will provide improved asset visibility and life cycle management.
- The industry supply chain will provide enhanced ability to supply innovative, tailored products and to strengthen customer relationships, fostering better buyer-vendor partnerships.

Additionally, we expect to see greater simplicity, standardization, speed, and certainty in automated data capture and electronic information exchange throughout DoD and industry processes. And we've also provided standard contract language for the marking and evaluation of items, to smooth the way for a PM's implementation effort.

There's no doubt that implementation is a rigorous exercise in collaboration and coordination. Ultimately, we hope this will build stronger relationships between DoD, industry, and coalition partners.

Q. *What are the guiding principles for the implementation of UID?*

A. Our philosophy has been to specify the minimum essential elements necessary to achieve our objectives for unique identification of the Department's assets. To the maximum extent practical, we want to use the current methods among our suppliers, including commercial practices. We will have a preference for international standards. This is in our best interest and the best interest of our coalition partners and industry as well. We have involved the international community and industry in the development of this policy and are continuing to collaborate with them for implementation. Internally, we're guided by our need for the integration of our efforts across the acquisition, financial, and logistics domains.

Q. *How does UID fit with other DoD initiatives?*

A. There is a complementary relationship among UID and ongoing initiatives in our transformation—at the OSD level and in the military services. The UID becomes an enabler that supports the programs for management of serialized items and asset visibility. It is a vital tool in the integrated digital environment that threads through our business enterprise architecture to provide financial integrity in acquisitions, stewardship of property, and management of inventory. Most important, UID will take combat support to a whole new level.

I have chartered the JRIB—the Joint Requirements Implementation Board—as a collaborative means for communicating, educating, and expediting UID implementation. The members of the JRIB, who are stakeholders from the acquisition, financial, and logistics domains, will coordinate the activities of working groups to develop UID business rules, reengineer business practices, and recommend pilot programs or demonstration projects. The JRIB will ensure that the implementation of UID fits the framework of our business enterprise architecture and facilitates transformation initiatives across the domains.

And now, specifically, there's a related initiative with radio frequency identification (RFID). On October 2, 2003, I signed a policy for use of 2007_UID-RFID

RFID within the Department. As I said in the policy memorandum, we must take advantage of the inherent capabilities of RFID to improve our business functions and facilitate all aspects of the DoD supply chain. RFID-recorded events will be used as transactions of record within maintenance and supply automated information systems. We see the RFID initiative as a vehicle to extend and take advantage of the implementation of the UID policy by focusing on improved data quality, item management, asset visibility, and maintenance of materiel throughout our system. The RFID tag will increase our productivity in every process within logistics.

Q. *You mentioned earlier that the Department recently issued an interim DFARS rule on unique item identification and valuation. What are your expectations from industry with regard to the rule?*

A. The DFARS interim rule is a mandatory DoD requirement for all solicitations issued on or after January 1, 2004. It's my expectation that in the period between the release of the interim rule in October 2003 and its becoming effective on January 1, 2004, collaboration with our industry partners will continue and the specific language in the interim rule will be finalized with no negative impact to our long-term implementation schedule.

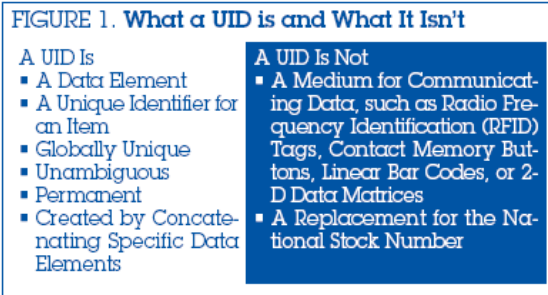
Q. *Where can program managers find guidance for implementation of the UID policy?*

A. We've made the latest information available on our website at www.acq.osd.mil/uid and have included the policy memoranda, background information, terms of reference, documentation of team activities, frequently asked questions and answers, and so forth. The Department of Defense Guide to Uniquely Identifying Items is posted there and provides a comprehensive treatment of the subject, with information for program managers to apply to their individual program circumstances. We've also posted DFARS guidance, which is essential for contracting officers to incorporate in their solicitations and contracts. And finally, many of

the ongoing implementation efforts are being coordinated through the UID program office. LeAntha Sumpter leads this office, and her

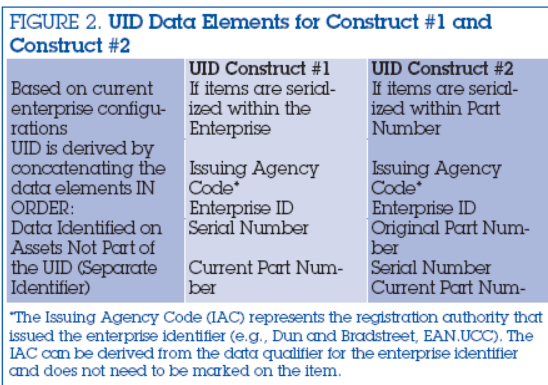
WHAT IS UNIQUE IDENTIFICATION (UID)?

A Unique Identifier (UID) is a data element that differentiates one item from another. Assigning a UID to an item serves two purposes: to enable the association of valuable business intelligence throughout the life cycle of an item and to ensure accurate capture and maintenance of data for valuation and tracking of property and equipment (Figure 1).



The Mechanics of Unique Identification

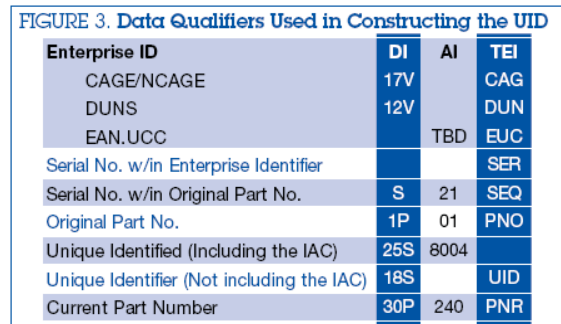
There are two methods to construct the UID for an item: (1) Serialization within the Enterprise Identifier, called Construct #1; and (2) Serialization within the Part Number (within the enterprise identifier, called Construct #2. The UID data elements for the constructs are summarized in Figure 2.



Automatic identification technology (AIT) is used to mark (or write) the UID data elements on an item and to read the UID using an automated

deputy, Rob Leibrandt is the primary UID point of contact.

reader. Marking the fully constructed UID on the item may not be required because the UID can be constructed from its component data elements as long as those elements are contained in the item mark. Data qualifiers (semantics) label each data element marked on the item. Data qualifiers can take one of three forms: alphanumeric Data Identifiers (DI), numeric Application Identifiers (AI), or alpha Text Element Identifiers (TEI). For additional information on DoD accepted data qualifiers (semantics), refer to the DoD Guide to Uniquely Identifying Items at <http://www.acq.osd.mil/uid>. Figure 3 shows the data qualifiers to be used in constructing the UID.



The current part number is not part of the UID. It is an additional, optional data element. Once the data elements are identified to the AIT device, the AIT device needs instructions on how to put the data element fields together to create the UID. The instructions are referred to as message syntax. For items that require a UID, DoD requires syntax that follows ISO/IEC 15434, Information Technology—Syntax for High Capacity ADC Media. Standard syntax is crucial to the UID, since the process of identifying and concatenating the data elements must be unambiguous.

Figure 4 shows examples of the data elements and their data qualifiers that are placed on the item. The figure further shows how the AIT devices would output the data elements in a concatenated UID according to the syntax instructions.



IMPROVING RFID TECHNOLOGY

By Jeffrey D. Fee and Alan Schmack

Since 1993, the Army has been pursuing the use of active radio frequency identification (RFID) tags to gain in-the-box visibility for both deploying equipment and sustainment stocks. Use of RFID tags was a response to lessons learned from Operations Desert Shield and Desert Storm in 1990 and 1991. Since then, growth in the use of tags clearly shows that RFID has become a very important part of today's Total Asset Visibility plan.

Initially, tag use was limited to demonstrations in places such as Haiti and Macedonia. In November and December 1995, U.S. Army Europe deployed to Bosnia as part of the North Atlantic Treaty Organization's Implementation Force with approximately 35 percent of its items tagged. By the spring of 1999, approximately 70 percent of all items moved for the Kosovo Force were tagged. Both the Army Reserve and Eighth U.S. Army in Korea received RFID-tagged sustainment stocks from Defense Logistics Agency (DLA) depots on the east and west coasts of the United States. In 2001, approximately 85 percent of equipment and sustainment stocks shipped from DLA that flowed into Operation Enduring Freedom in Afghanistan had RFID tags. In 2002, the commander of the U.S. Central Command (CENTCOM) released a message requesting that 100 percent of the items moving into, through, or out of the CENTCOM area of responsibility be tagged to permit nodal asset visibility. On 30 July 2004, the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics released a policy letter stating that "all DOD [Department of Defense] components will immediately resource and implement the use of

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high data capacity active RFID in the DOD operational environment."

The Present

Active RFID tags require fixed infrastructure, such as read interrogators, to provide in-transit visibility at different nodes of the supply chain. However, the best visibility that this capability can provide is a pretty good fix on where equipment was last detected, not necessarily where it is currently located.

Even with the robust active RFID infrastructure currently in place, immediate asset visibility is not possible when deploying into austere environments. The fastest that the Army and DOD have been able to set up a fixed RFID infrastructure in an austere environment is approximately 2 to 4 weeks. By that time, under normal operational tempo for an ongoing operation in the deployment stage, combat equipment and supplies have already moved through the intermediate staging base. This leaves the RFID infrastructure to play catch-up, which, of course, never happens until much later in the operation.

Fixed RFID infrastructure also adds materiel to an already overburdened support system. Power is required for the RFID interrogator and the computer that collects the data and provides them to the in-transit visibility servers. RFID also requires communications (by phone, local area network, or satellite) to report the location and asset information collected by the computer. Contractor logistics support is needed to install and maintain this fixed infrastructure, which adds to the security burden of area commanders. Power, communications, and contractor logistics support are not always available when and where they are needed, particularly during the beginning stages of a deployment.

Lessons learned from Operation Enduring Freedom and Operation Iraqi Freedom show that the best we can expect from the current RFID capability, as technically efficient as it is, is to know where supplies and equipment were, not where they are.

The Future

Although demand for active RFID has increased greatly, the technology has hardly changed in the last decade. The first step in creating the next generation of RFID tagging systems for asset tracking is taking three commercial-off-the-shelf products (the current standard DOD RFID system, a commercial global positioning system [GPS], and an Iridium satellite) and integrating them into one to create a new, enhanced capability.

RFID integrated with satellite communications and a GPS results in a single device that can overcome the “where is it now?” asset tracking problem. A prototype of this new capability being tested by the Army Logistics Transformation Agency is called Third Generation Radio Frequency Identification with Satellite Communications (3G RFID w/SATCOM). It has the potential to provide DOD with unprecedented on-demand supply and equipment in-transit visibility without fixed infrastructure. These new tags maintain all of the capabilities of their predecessors and,

RFID VISION IN THE DOD SUPPLY CHAIN

By Alan Estevez

Today’s U.S. military is a dynamic, rapidly moving force designed to be effective in a synchronous battlespace. The enhanced mobility and speed of a combat force capable of performing in austere theaters with limited infrastructure creates a new class of challenges for military logisticians. The performance of logistics during the combat phase of Operation Iraqi Freedom created a compelling case for change to fast, accurate, flexible, and mobile sustainment support.

through the use of satellite and GPS, allow for true, up-to-the-moment global asset tracking.

The 3G RFID w/SATCOM system would be particularly useful in the beginning stages of a deployment, when regional combatant, joint task force, and other commanders find that their asset management information needs are most critical, by helping them in assessing their combat effectiveness. Under these circumstances, commanders require near-real-time and on-demand visibility.

The pursuit of Total Asset Visibility remains a critical element in achieving Focused Logistics and Sense-and-Respond Logistics concepts. The 3G RFID w/SATCOM system will take a huge step forward in attaining these goals. For the past decade, the Army has been using active RFID technology to gain asset visibility. Today’s capability provides information on where equipment was, not where it is. Additional RFID infrastructure is needed, which likely will increase the burden on an already taxed support system. While potentially reducing or eliminating the current fixed infrastructure, 3G RFID tags will provide unprecedented in-transit visibility. This increased visibility will enable the modernization of theater distribution and will be a key tool in connecting logisticians.

Historically, military logisticians supported the Warfighter with limited information on assets, particularly in theater. This obstacle led to ineffective inventory management, introducing waste, inefficiency, and delay across the supply chain. Ultimately, these shortfalls impacted the Warfighter’s overall materiel readiness, the ability to close the force, and the operational availability of weapon systems. The lack of synthesized end-to-end, real-time theater information on assets (including both at-rest and in-transit items) across all components, undercuts the ability of the combatant commander (COCOM) to exercise directive authority for logisticians.

The bumper-sticker thought that is frequently used to refer to this issue is “visibility,” but visibility is not an end in itself. Visibility is a tool to achieve specific outcomes in support of the following objectives:

- Reliably deliver the required item to the right location in the correct quantity at the time required from the most appropriate source
- Make available tools and information for decision makers to exercise effects-based management of the logistics network
- Manage end-to-end capacities and available assets across the end-to-end chain to best support Warfighter requirements
- Promote the ability of the supported COCOM to effectively exercise directive authority over logistics.

The Enabling Technology: Radio Frequency Identification

Radio Frequency Identification (RFID) is an enabling technology that will allow military logisticians to create synthesized and integrated end-to-end information on assets. The Department of Defense is already a globally sophisticated user of active RFID, with over a decade of experience in the technology and the most extensive network in the world. Now the DoD is standardizing the use of active RFID and moving ahead with the application of passive RFID technologies. In 2004, the acting under secretary of defense for acquisition, technology and logistics issued a policy requiring the implementation of RFID across the DoD. The Department of Defense is taking a leadership role in passive RFID, both as an early adopter of the technology and by driving the development of the technology and standards.

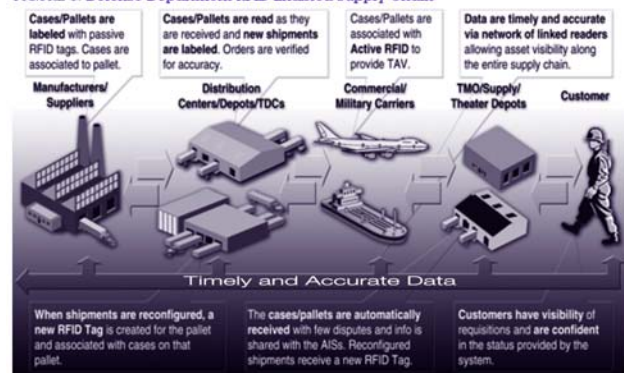
The policy directs military services and defense agencies to immediately expand the use of high data capacity active RFID currently employed in the DoD operational environment. The policy also directs the phased application of passive RFID by DoD suppliers who will be required to put passive RFID tags on the cases and pallets of materiel shipped to DoD as well as the

packaging of all items requiring a Unique Identification (UID). Beginning in 2005, DoD suppliers will be required to apply passive RFID on shipments of selected classes of supply going to the Defense Distribution San Joaquin, Calif., and the Defense Distribution Susquehanna, Pa. Further classes of supply and nodes will be added over the next several years, with full implementation expected by 2008.

DoD's Vision for RFID

The end state for the DoD supply chain is to be a fully integrated adaptive entity that leverages state-of-the-art enabling technologies and advanced management information systems to automate routine functions and achieve accurate and timely in-transit, in-storage, and in-repair asset visibility with the least human intervention. RFID is a foundational technology on the path to achieving this vision. DoD will ultimately operate a single, seamless, responsive enterprise visibility network, accessible across the backbone and usable by people and systems across the end-to-end supply chain. As a starting point, the DoD vision is for RFID to facilitate accurate, hands-free data capture in support of business processes in an integrated DoD supply chain enterprise as an integral part of a comprehensive suite of automatic identification technology (AIT) applications that DoD will leverage, where appropriate, in the supply chain to improve Warfighter support, as depicted in Figure 1.

FIGURE 1. Defense Department RFID-Enabled Supply Chain



Clearly not all DoD logistics supply chain operations are captured in this picture. However, the primary actions performed by the physical

nodes to move materiel through the logistics chain are the shipping/ receiving/transportation processes. Figure 1 shows materiel movement that physically “touches” each node throughout the logistics path. But materiel can start, end, and move through different paths between logistics nodes: manufacturers/suppliers to defense distribution center for stock replenishment; defense distribution center to supply depots/ theater distribution center for stock replenishment outside the continental United States; defense distribution center to supply depots for stock replenishment in the continental United States; supply department/theater distribution center to customer; direct vendor delivery.

All these segments are impacted by RFID. Materiel movement includes moving retrograde back through the supply chain in the opposite direction. RFID (active and passive) read and write capabilities will be required at the farthest point in the supply chain delivery system to support retrograde. The return/retrograde process is the same as the shipping process.

With passive RFID, DoD will capture more granular data automatically, injecting advanced technology at the transactional level. This foundation will streamline the movement of materiel through warehouses and depots, increase inventory accuracy, and generate productivity improvements. Active RFID is a cargo-tracking capability and provides the ability to manage consolidated shipments. With the addition of passive RFID to the technology portfolio, the military is developing an end-to-end capability relying on complementary active and passive technologies to deliver an RFID suite applicable to all inventory – in-transit, in-process, or on the shelf.

Historically, information across the supply chain has been captured only at the predefined nodal touch points. The data capture has generally been used to update systems of record and in some situations, to generate status notifications. To speed the adoption and implementation of passive RFID technologies and accelerate the

learning curve, components are initially using passive capabilities for transaction sets similar to (and sometimes identical to) legacy transactions. However, once the foundational implementations are established, the true promise of passive RFID may be realized. RFID delivers near real-time status, enables better inventory control (particularly in a deployed or combat environment), and can make track and trace around the world, across the silos, a reality.

No longer will the DoD be constrained to capturing information on at-rest and in-transit inventories at fixed locations. As RFID tagging becomes more ubiquitous and RFID technology more portable, real-time information can be captured wherever required to support the requirements of the COCOM. Equally important, the adoption of passive RFID standards will serve to undermine the silos and barriers to information flow across and among the components that have historically been a challenge for the DoD. The military logistician will be able to deploy and move a logistics infrastructure and visibility capability as rapidly as the COCOM can deploy and engage the combat force.

RFID in the Bigger Picture of Automatic Identification Technology Apps

RFID is a part of a larger suite of AIT applications, all of which the DoD will leverage, where appropriate, in the supply chain. As an enabling technology, RFID data must be available to the automated information systems (AISs). To take advantage of the capabilities RFID provides, managers of all major logistics systems modernization programs will update appropriate program documentation to include the requirement for RFID capabilities as part of the system operational deployment in conformance with the business rules and initial timeline set forth in the DoD RFID Policy. Managers of major acquisition programs will update programs as required, including the requirement for RFID capabilities where applicable.

Active and passive RFID will continue to complement one another as passive RFID technology is implemented throughout the DoD. Many shipments moving through the defense transportation system are currently tracked using active RFID and a bar-coded military shipping label. The implementation of passive RFID will complement the current successes of active RFID for shipments outside the continental United States.

The association of a passive tag to an active tag will provide improved container stuffing and unstuffing time and improved accuracy to facilitate “inside the box/pallet/container” visibility. This passive and active association is created by building a “nested” structure of passive tags (UID item packaging, case and pallet tags) that are subordinate to the active tag (container and 463L pallet-level tags). Historically, active RFID has been excellent at providing nodal visibility. The implementation of passive tags provides efficient and accurate item and detailed content visibility. The marriage of active RFID with passive RFID will facilitate more accurate and timely automatic capture and reporting of data within the multiple layers of information required in DoD’s dynamic environment.

The Relation of RFID to UID

RFID deployment also complements the ongoing Unique Identifier (UID) initiative. While the UID and RFID initiatives are closely related, they have important fundamental differences. UID is a permanent, unambiguous, and globally unique identifier for an item. RFID is a means of collecting data using radio frequency technology. RFID will be used as a hands-free data collection method to identify UID items located within various levels of materiel packaging. In order to identify the UID item using RFID, the RFID tag data on the unit packs, shipping containers, exterior containers, and palletized unit loads must be associated to the UID information in a logistics system. Using RFID tags as a means of data collection and associating the tag data with UID information

will help to maintain precise UID asset/in-transit visibility and to improve data quality, item management, and maintenance of UID materiel throughout the DoD supply chain. The hands-free data collection method will help extend and take advantage of the implementation of the UID policy. However, the UID initiative requires a data matrix be applied to each UID item. The data matrix is a two-dimensional barcode, an alternate form of AIT. The combination of 2D barcode and RFID technologies incorporated into AIT equipment will facilitate the UID and RFID relationship.

Because of the “nested” structural relationship that will result, it is envisioned that passive RFID will be used to verify contents, track physical movement, and virtually build the contents of a 463L pallet or SEAVAN container. Passive RFID will accurately verify, in real time, and communicate to the local AIS (and personnel physically loading the pallet/container) the contents of the 463L pallet or SEAVAN container. Once the pallet/container is properly configured, an active tag is attached to the 463L pallet or SEAVAN container to track and trace the transportation. At the final destination, when the pallet/container is unloaded, passive RFID will again verify the contents and track the physical movement of the materiel within the destination node. Additionally, this nested data will be used to create a transaction of record and close the transportation transaction once the items are received. As stated before, RFID is part of a family of AIT devices that includes, but is not limited to, bar codes, optical memory cards, smart cards, micro-electro mechanical systems, and satellite tracking systems. RFID and bar codes will coexist for several years, as both technologies have their merits. However, RFID brings several benefits over bar codes:

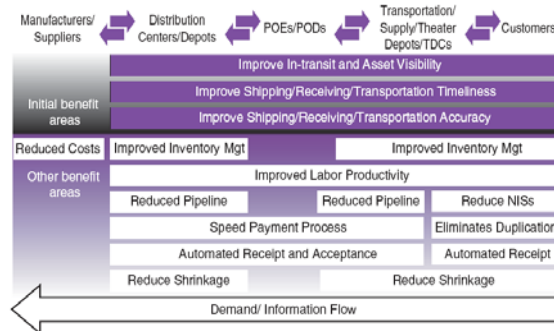
- Eliminates human error
- Improves data accuracy/asset visibility
- Performs in rugged, harsh environments
- Allows for dynamic, multi-block read/write capability
- Facilitates source data collection

- Allows for simultaneous reading and identification of multiple tags.

the right place at the right time, even in the face of rapidly evolving conditions in the battlespace.

The employment of RFID provides several benefits to the overall DoD supply chain. Figure 2 identifies these potential benefits and the respective nodes.

FIGURE 2. High-Level Illustration of the Benefits of RFID Across the DoD Supply Chain



DoD-wide Business Process Change

It is envisioned that each military service and defense agency will review its internal business processes to further refine the most appropriate employment of RFID. The widespread integration of RFID into the DoD business processes should be managed with the same level of attention as a major system fielding. Although this technology enables accuracy and timeliness of data within current and future systems of record, introducing RFID will require significant planning, equipment fielding, AIS changes, and training. The systems approach should be taken to ensure a long-term, fully integrated solution.

The real value of RFID lies not in what we know it can do today, but in uncovering what it will do in the future. DoD is in the midst of the most fundamental transformation of logistics capability ever attempted, and RFID is a foundational element. Through RFID deployment, DoD is laying a foundation that allows military logisticians to see an exciting capability – Web-centric logistical control – riding on new applications able to see and manage end to end not just the enterprise-centric silos managed by legacy approaches today, but factory to foxhole, delivering the right item to

Meeting Notices

Luncheon Meetings: Third Tuesday of the month.

Date	Time	Location
16 January 2007	1130-1300	Sheraton Eatontown
20 February 2007	1130-1300	Sheraton Eatontown
22 March 2007	1130-1300	Sheraton Eatontown
17 April 2007	1130-1300	TBD

Chapter Management Committee Meetings: Fourth Thursday of the month.

Date	Time	Location
08 February 2007	1130-1300	Lockheed Martin
22 February 2007	1130-1300	TBD
22 March 2007	1130-1300	TBD
26 April 2007	1130-1300	TBD
24 2007	1130-1300	TBD

Other Functions:

Date	Time	Location
15 May 2007	All day	Sheraton Eatontown

"Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information on it."

Samuel Johnson (1709-1784), quoted in Boswells' Life of Johnson

"Learning is not attained by chance; it must be sought for with ardor and attended to with diligence."

Abigail Adams (1744-1818), 1780

"Logistic considerations belong not only in the highest echelons of military planning during the process of preparation for war and for specific wartime operations, but may well become the controlling element with relation to timing and successful operation."

Vice Admiral Oscar C. Badger, USN

Supply chain – a set of three or more entities (organizations or individuals) involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer.

Supply chain management – the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.

2006-2007

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