RFIDefense™ REVIEWS

A SUPPLEMENT to the *Defense Transportation Journal*, the Official Publication of the National Defense Transportation Association

Brought to you by the
National Defense Transportation Association
For more information visit www.ndtahq.com

Published by
Carden Jennings Publishing Co., Ltd.
For more information visit www.cjp.com

Learning from the Department of Defense's RFID Implementation

Review by Alena Amy, XIO Strategies, Inc.

EDITOR
Mary Ann Wagner

MANAGING EDITOR
Alena Amy

This report is based on a keynote address presented at the RFID Journal LIVE! meeting, on May 2, 2006, in Las Vegas, Nevada. The presentation was made by Alan Estevez, the Assistant Under Secretary of Defense for Supply Chain Integration.

SUPPORTED BY

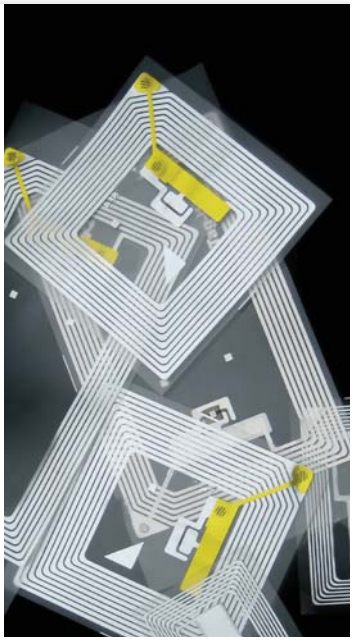
XIO Strategies, Inc.—www.xiostrategies.com
SAP—www.sap.com
Univ. of Alaska Anchorage—www.uaa.alaska.edu

As the Department of Defense (DOD) continues its phased rollout of Radio Frequency Identification (RFID) technology, Alan Estevez is driving home a single point: RFID is critical not for the innovative technology itself but for the actionable information it enables. Speaking at the RFID Journal Live! Conference on May 2, 2006, the Assistant Deputy Under Secretary of Defense for Supply Chain Integration noted, "my job is not to support RFID implementation in the Department of Defense. My job is to determine how to integrate the supply chain across DOD, and RFID is one tool in the toolbox to accomplish this. This isn't about RFID, it's about getting the data necessary to gain visibility—visibility into what you have, where you have it, and how you're going to use it."

RFID is a tool that we can use to facilitate identification of critical items and move these forward in the supply chain. For us, it is crucial to get the supplies delivered that are needed to accomplish the mission.

In many ways, the Department of Defense is akin to a massive business. The FY05 President's Budget set aside more than $120 billion in total logistics costs, including funds for supply, maintenance, and transportation, and the DOD maintains more than $700 billion in assets, including ships, aircraft, combat vehicles, strategic missiles, and ground vehicles. Unlike Wal-Mart or a large commercial retail business, however, the Department of Defense has the unique problem of a mobile infrastructure. Instead of shipping to fixed distribution centers and stores, the supply chain must move to accommodate changing political climates, military engagements, and relief efforts. In a dynamic environment such as this, Estevez notes, "being able to have the right supply at the right location at the right time is critical."

RFID technology facilitates the delivery of this operational availability in a number of ways. First, it increases the reliability of the supply chain. Currently, the DOD transports the most important items in an average of 11 days. The average delivery for the fiftieth percentile of orders is 16 days, though it can take as many as 108 days for the lowest ninety-fifth percentile of orders to be fulfilled. As Estevez explains, "Everything is important to the person who ordered it, but RFID is a tool that we can use to facilitate identification of critical items and move these forward in the supply chain. For us, it is crucial to get the supplies delivered that are needed to accomplish the mission." Reducing the wide variability instills confidence in the supply chain. This confidence, in turn, leads to fewer reorders that would otherwise bog down the supply chain. In Iraq, consolidated shipments from the RFID-enabled Distribution Center in



Susquehanna, Pennsylvania now take an average of 14 days to reach military forces.

In addition to reducing variability in the supply chain, RFID technology has the potential to add visibility into what should (and shouldn't) be in the supply chain by tracking not only where an item is, but also when it is consumed and should be reordered. At any given moment, the Department of Defense has a substantial number of backorders in inventory. According to Estevez, "it is just as important to determine what should be in the supply chain as it is to track what is already in the supply chain. Right now, we know what is sent to a soldier, but we don't have any visibility into when it's actually used. RFID is a long-term tool that can help track consumption." By gaining insight into when an item is stored on a shelf and when it is actually used, the DOD has advanced knowledge of the materials that should be entering the supply chain.

A more reliable supply chain also allows for a reduced and more flexible logistics footprint. Every soldier and platform that is transported into war is accompanied by a support package, whether it's food and force protection or mechanics and spare parts. "This support means there is a huge tail to support the tooth of the mission. Reducing the tail is a huge advantage," says Estevez. "If the DOD has a reliable supply chain and soldiers know parts are coming to fix a platform, that prevents the compromise of other platforms." Instead of sending 12 planes to do the job of 8 planes, the DOD can send 10 planes to do the job of 8 planes.

FINDING ROI

In addition to providing improved support to the war fighter, Estevez stated that a primary objective of the DOD is to find a return on investment (ROI) for the taxpayer. In 2005, the DOD conducted a theoretical business case analysis (BCA) on the use of passive RFID. The analysts calculated the best- and worst-case scenarios using the most conservative and optimistic figures available. The conservative BCA estimates that the DOD will break even in approximately three years and will generate a $70 million payback to the taxpayer after seven years. The optimistic BCA estimates that the DOD will break even almost immediately and will yield $1.7 billion over seven years. Despite the wide range in projections, ROI was forecast in both the best- and worst-case scenarios. In the case of the military supply chain, emphasis is on support to the war fighter over immediate

cost efficiencies. For this reason, adoption by DOD was considered even if the conservative view was assumed at start up.

This study did not include inventory savings or readiness impact, both of which Estevez posited would add significant value. According to his estimates, there are potential inventory savings of 5 to 10 percent or $3.5 billion to $7 billion. In addition, RFID can increase readiness by giving insight into when and a where an order is being delivered. Observes Estevez, "If a high asset item such as a helicopter or jet is not functioning because it is waiting for a repair item, it is not a gainful use of that platform. RFID, in turn, can help solve the problem of knowing where the part is and therefore increase readiness." Also critical to increasing readiness is facilitating interoperability across military services and logistic disciplines (supply, maintenance, etc.). Because DOD is, in many regards, a holding company, Estevez notes that the capability to pass data through the network is vital. "How do you facilitate jointness across the Services and supply line? You must have the right tools. It's about capturing the necessary data, and RFID provides a hands-off method for collecting it."

EARLY IMPLEMENTATIONS

The Norfolk Ocean Terminal project demonstrated that RFID technology could be used to fix an existing business process issue. After fully implementing RFID, Norfolk saw a three percent improvement in accuracy and a 39 percent improvement in time savings. The USS Nassau Navy Command and Control Ship also conducted an RFID test on a more limited scale. By using RFID in conjunction with a large screen monitor, they were able to reduce the number of soldiers from 12 to 3 and saw significant productivity gains in their receiving and sorting process. On a ship with limited space, decreasing the number of sailors necessary is also a significant benefit. Lastly, the Advance Traceability and Control Transportation (ATAC) system has an ongoing RFID implementation that allows for the collection of automated receipt information. Using passive RFID, system operators identified 355 shipments worth $12.6 million where no proof of delivery information was previously recorded in the depot logistics system. The DOD is also considering a similar application of RFID technology. Passive tag reads can be used to generate feedback to DOD vendors and provide visibility of RFID tagged material as it arrives and is processed into the DOD network.

The conservative BCA estimates that the DOD will break even in approximately three years and will generate a $70 million payback to the taxpayer after seven years. The optimistic BCA estimates that the DOD will break even almost immediately and will yield $1.7 billion over seven years.

RFID BENEFITS IN IRAQ

As the DOD enters the second year of its three-year phased implementation, troops in Iraq are learning how to take advantage of the technology. Estevez highlighted three major benefits realized in Iraq during current operations. The first is enhancements to the last tactical mile. The II Marine Expeditionary Force (MEF) has been using RFID as a sensor to provide information about where materials are in the supply chain, along with satellite communications, routers, and a google-

The inventory in Iraq has been reduced from $127 million to $70 million, and the wait time has been reduced from 28 days to 16 days. The fill rate has increased from 77 percent to 89 percent.

like tool for military items called BCS-3. The combination of all of these tools has led to a business process change on the ground. Estevez describes the feedback he received from the soldiers: "As I walked around Iraq talking to people who were actually using technology, a Major told me that the question has changed from 'Where's my stuff?' to 'Why isn't my stuff moving?' until it was no longer even a question: 'Take that item and put it on the truck because I know the other item we need is already on the truck.'"

In addition to the paradigm shift evident in the Major's remarks, RFID has enabled real-time asset visibility and real cost avoidance. The inventory in Iraq has been reduced from $127 million to $70 million, and the wait time has been reduced from 28 days to 16 days. The fill rate has increased from 77 percent to 89 percent. In part because of RFID, Marines at the forward operating base have the capability to see where critical items are in the supply chain and when these items are delayed somewhere waiting to ship. This visibility gives them confidence that their orders are on their way, so there are significantly fewer reorders—11,000 instead of 92,000. Because reorders use critical lift, clog the supply chain for other critical supplies, and take up inventory, this reduced retail backlog is a significant improvement.

NEXT STEPS

On May 19, 2006, DOD issued an interim rule amending the Defense Federal Acquisition Regulation Supplement (DFARS) regarding the three-year rollout plan for supplier implementation of RFID. It expands the list of commodities and the number of shipping locations to all 16 Defense Distribution Depots and three aerial ports. Year one of the plan was implemented in the final rule effective November 14, 2005. The new DFARS rule also proposes that beginning October 1, 2006, the only acceptable tag types are those that conform to the Class 1 Generation 2 specification.

The DOD, Defense Logistics Agency (DLA), and US Transportation Command (TRANSCOM) are participating in a premiere RFID integration operation dubbed the Alaska RAPID project. Funded by Congress, the project will implement passive RFID within an end-to-end DOD supply chain in order to test data capability at a more robust level than today. This project will also afford the opportunity to analyze processes to determine the most effective use of RFID within DOD business processes, demonstrate the integration of passive and active technologies, and use RFID with the existing DOD architecture to increase material visibility. RAPID is considered the signature DOD RFID implementation and will include Elmendorf Air Force Base in Alaska, Fort Richardson in Alaska, and Travis Air Force Base in California.

RFID IS ONE TOOL IN THE LOGISTICS TOOLBOX

As Estevez made clear from the beginning, RFID is just one tool that can help solve supply chain problems. The key to finding ROI is transforming the data made available by RFID and other technologies into actionable information. RFID can enable a smooth, integrated supply chain, but only to the extent that the information is used to enhance and fix the business process. As Estevez states, "I am an RFID cheerleader, but not because it's a cool technology. At the DOD, we're embracing RFID because we think it's a good thing for us and will add value to support the forces out on the field." The greatest payback to suppliers and the DOD will be in the form of knowledge. How each business uses this knowledge will determine their overall success. ■