RFID in the Department of Defense

Efficiently Supporting the Warfighter

The use of pRFID (Passive Radio Frequency Identification) in the DoD (Department of Defense) supply chain has demonstrated the potential to provide real benefits for Inventory Management, Asset Visibility, and Interoperability in an end-to-end integrated information technology environment. pRFID enables data accuracy opportunities inherent in all types of automatic identification technology (AIT). Additionally, pRFID is a non- intrusive methodology for data capture (pRFID does not require human intervention) as it is a non-line of sight technology with both read and write capabilities.

The DoD, like its commercial counterparts, is benefiting from the rapid advancement of pRFID technologies. Specifically, the performance, costs, technical requirements, and physical footprint of pRFID have dramatically decreased. pRFID tags have matured over the past five years resulting in significantly increased performance, and as production volumes increase, economies of scale allow for a competitive landscape in pricing. Evolution of the hardware and tags, combined with enhancements made to the enterprise data systems that accommodate the tracking of items through a growing network of read-points, is allowing the vision to unfold.

pRFID addresses many opportunities, but a key challenge identified at every node within the DoD supply chain is the lack of visibility of item data. pRFID has become a key technology enabler for the DoD's supply chain and logistics operations by providing:

› Near-real time in-transit visibility for supplies and materiel

› "In the box" content level detail for supplies and materiel

› Quality, non-intrusive identification and data collection enabling improved inventory management

› Confidence in the supply chain by improving visibility to item level visibility and consumption data

Maintenance, Repair, & Overhaul

The DoD, in addition to using RFID to address distribution supply chain challenges, is using RFID to reduce operation inefficiencies and costs in its maintenance, repair, and overhaul (MRO) efforts. MRO systems, enabled with RFID, now provide intelligence regarding forecasting, maintenance planning, part location, availability, and worthiness. Integrated MRO strategies based on RFID tagging can also deliver marked efficiencies to the processes of locating parts, tools and materials, and to producing the significant amounts of documentation required to meet regulations.

In aircraft maintenance, for example, when an RFID tag is assigned to a component it can record every stage of its repair work, from its removal from the aircraft to its subsequent reinstallation. Stakeholders can automatically track exactly what type of repair work was performed, where it was performed and by whom.

Supply Chain, Inventory Control, & Consumption Visibility

Today, the primary use of RFID in the DoD supply chain is to provide knowledge-enabled logistics through fully automated visibility and management of assets in support of the warfighter. RFID sites, typically found at supply and transportation nodes such as depots, terminals, ports, supply support activities, and even some manufacturing facilities, allow the DoD to address a key challenge – lack of visibility of item data.

RFID will grow as a key technology enabler for DoD logistics as it:

› Increases warfighter/customer confidence in the reliability of the DoD supply chain

› Improves visibility of information and assets throughout the DoD supply chain

› Improves process efficiency of shipping, receiving and inventory management

› Reduces cycle time

In addition to benefits for the DoD, an integrated MRO supply chain can improve service performance in a manufacturer's storeroom by simplifying inventory, purchasing, and other business processes making way for the centralization of all sourcing, procurement, receiving, internal distribution, and service.

Manufacturing Control

Suppliers to the DoD are finding their own benefits for RFID. In addition to the visibility gained for developed goods, manufacturers are using the technology for shop order tracking, transportation order tracking, parts location, and more. Customers benefit from manufacturer implementing RFID-enabled manufacturing control systems as they may be given visibility to all Work In Progress (WIP) and access to "on-demand" advanced shipping notices.

A manufacturer, for example, may tag components that are tracked as they move through the assembly process. Strategically placed RFID checkpoints monitor throughput information for use by both the manufacturer and the customer. Customers are alerted to en-route shipments through the receipt of advanced shipment notices and exception reports are automatically generated upon arrival at the customer site. Benefits from such an implementation could include:

> Reduced labor costs

> Increased inventory usage and control

> Reduced stock shortages

> Increased WIP management

> Reduced shrinkage

Enterprise Data Systems

As quickly as RFID technologies have been evolving, so too have the enterprise data and business process management systems used to store, track, manipulate, and gain intelligence from the increasing amounts of data provided by an RFID-enabled supply chain. Companies such as IBM, BEA Systems, Microsoft, Oracle, and SAP have led the incorporation of RFID into enterprise resource planning, business process management, corporate process management, and computerized maintenance systems. The efforts and investments made by these business system providers only validates that RFID will grow as an integral piece of the business intelligence environment.
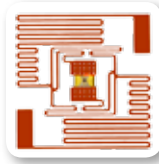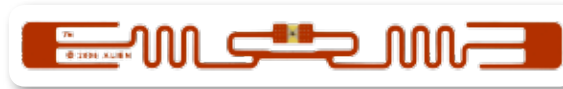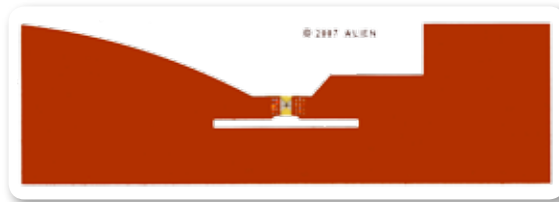
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Alien Technology Family of RFiD Products

As data collected from RFID is incorporated into enterprise systems, these systems will:

> Automatically generate work-order traceability

> Eliminate manual process confirmation

> Automate bottleneck resolution

> Deliver real-time alerts to and from operations-floor staff

> Provide real-time operations analytics

Today's warfighter is being better served as RFID contributes to supply chain confidence and efficiency.

Alien Technology® works with a global partner community of expert integrators, software developers, and hardware vendors to deliver solutions throughout the DoD and DoD supplier community. In addition to industry leading Gen 2 RFID tags and readers, Alien Technology offers an extensive set of expert RFID services including education, consulting, and implementation.