



USMC Project RFID

OVERVIEW

The United States Marine Corps (USMC) needed a more efficient method for expeditiously and accurately processing fleets of wheeled vehicles, general rolling stock and high value assets, maintaining visibility and equipment status. CDO Technologies and their partners have supported this USMC effort using a variety of passive Radio Frequency Identification (pRFID) products and supporting infrastructure components to facilitate USMC efforts.



BACKGROUND

The Marine Corps Logistics Command (LOGCOM) Distribution Management Center (DMC) has responsibility for Marine Corps enterprise-level distribution management and for planning and management of storage operations for ground weapon systems Principal End Items (PEIs) and associated materials. DMC will

affect the most reliable distribution of all classes of supply to sustain readiness of forward deployed forces, while maintaining CONUS-based operations.

Driven by the USMC mission, the primary goal of the RFID project is to gain improvement in the velocity and accuracy of processing equipment (receipt, inventory, issue) and materials for wholesale storage, in addition to improving overall equipment visibility and reporting of equipment status for the USMC LOGCOM facilities in Albany, GA and Barstow, CA.

LOGCOM is the destination for most Marine Corps ground equipment and rolling stock being shipped back from war efforts in Afghanistan. With so much equipment returning, and with fewer hands to manage the inventory, it made sense to leverage available technology to gain efficiency.

THE SOLUTION

The goal is to effectively track assets as they arrive, be able to easily locate assets when identified for maintenance and subsequent return from maintenance for storage or redeployment to the field. RFID systems were being used at other

USMC facilities, so LOGCOM was able to take advantage of a vast amount of testing and deployment experience in selecting the specific components for their implementation.

Fixed readers are placed at key choke points to automate both location and business processes. Fixed readers are placed both indoors and outdoors. Outdoor, solar powered readers are placed at the truck gate, rail head and other key choke points. Mobile readers are placed on forklifts and GEM Carts. Tags are read at key steps of the business process with both the fixed and handheld readers. Once read, the data is forwarded to the legacy systems. Data is filtered by part number, serial number,





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condition code, next inspection date, due-in date and several other criteria. Data is used to automate Receipt, Store and Issue business processes, item and location identification, as well as Care of Supplies in Stores.

SYSTEM COMPONENTS

CDO supplied equipment from several partners to provide the total system:

- Omni-ID Passive RFID Tags
- Motorola handhelds and fixed readers
- Jamison portals /solar portals
- Orbit GPS modules
- Wireless access points from Fortress Technologies
- Panasonic H2 mobile computers

Further, in order to supply a solution that was the most flexible for mobility, functionality and minimal facility infrastructure requirements, the solution was designed to be self-contained, powered from solar panels with high capacity battery backup. The solar powered readers communicate via the USMC accredited wireless network.

CHALLENGES

Finding the right passive RFID tag was one of the biggest challenges. Omni-ID worked with the team to custom-develop a passive long-range (over one hundred feet) RFID tag that would fit between the ridges on the side of an ISO 20 foot standard container. The resulting Dura 3000 fits within the grooves and provides the required distance. Historically tracking these containers has been very challenging as they are continually being redeployed throughout the world. Once infrastructure is in place at all facilities, whether the container is in theatre at Camp Leatherneck or in the yard at Barstow, the container and its contents will be visible to the system.

System latency was overcome by placing servers at each USMC LOGCOM facility. In the future, smart reader technology will be used to overcome real time response.

BENEFITS

- Since pRFID tags don't require batteries, the system should be more reliable and less expensive to implement and operate than previously tested active RFID systems.

- Inventory accuracy will be increased on several million dollars of assets.
- Employees can use time more efficiently – lat/long detail will reduce time in finding assets .
- There is full asset visibility - arrival, departure, maintenance in/out -- all stock, in a verifiable record.

The improvement in inventory accuracy and accountability will be significant (expected overall goals are to achieve a 50-75% increase in velocity/throughput) with a large reduction in manual input transactions and reduced time for searches.

This project provides an example of remarkable use of passive RFID technology in the U. S. Government - providing efficiencies of operations to save tax payer dollars.



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