



Case Study **The United States Marine Corps (USMC)**

# Improving the accuracy of processing equipment

Generating equipment visibility for  
The United States Marine Corps (USMC)



[omni-id.com](https://omni-id.com)

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.

#### Industry

Government & Defence

#### 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.

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..

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 CONUSbased 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.

#### The Solution: Effectively track assets

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, 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.

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**The Challenges:****Finding the right passive RFID tag**

Omni-ID worked with the team to custom-develop a passive longrange (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.

**The Benefits:****A remarkable use of passive RFID technology**

- 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.”**

Designed	Tested
 High UV tolerance	 Label pull strength above 15kg
 Label should adopt as little dirt as possible (slippery/low moisture absorption)	 If the label is removed, it should be visibly damaged and not be reusable
 Weight below 23 grams	 RFID performance should be the same or better as with the red tag
	 Water resistance (non emersion: exposure to rain and watering of plants)
	 Resistant to solvent and chemicals used in agriculture grower and retail operation (like chloring solutions)
	 Storing temperatures from -30 to +70, operating temperatures from - 10 to +60
	 Material tested for the automotive industry