

## Department of Defense RFID Mandate Solution

U.S. based manufacturer provides a variety of uniforms to the United States military. Part of the manufacturer's contract with the Defense Logistics Agency (DLA), is to tag each garment with a UHF Radio Frequency Identification (RFID) tag per specified guidelines. Cartons and pallets of garments must be tagged with a similar RFID tag. All the tag numbers must be correlated in a hierarchy order and must be uploaded to the DoD's VIM system.

A solution consisting of software, hardware and RFID smart labels was deployed to help the manufacturer seamlessly meet the government's mandate. A top objective was to change as little as possible to the customer's manufacturing process. Equally important was the simplicity of the system due to the manufacturer's limited IT staff.

The hardware that was used in the solution consisted of Zebra's RFID printers. Because the printers have a reputation of reliability in an industrial environment, Zebra was an obvious choice for this application. Further, the printers are flexible to support a wide range of RFID tag sizes and differing chips that are introduced frequently to the market. The deployed printers generate a RFID sticker labels for the cartons and pallets. A second Zebra printer was used to print the RFID hangtags that were attached to each garment. Garment tags were printed before each piece was manufactured and affixed to the garment during the finishing process.



A second piece of hardware used was a UHF fixed reader made by Zebra Technologies, the FX7500. The reader and an antenna were mounted along a conveyor. The purpose of this reader is to associate the garment tags values with their parent carton tag value. Also, this part of the system validated the correct number of garments were packed into each carton.

The tags used in the solution exceeded the expected performance outlined in the DoD's RFID mandate specifications. The solution printed the RFID tag value, national stock number (NSN) and description on each garment tag in addition to encoding the tag with the proper value. Each hangtag had a hole for easy attachment to the uniform. The carton and pallet tags have the correct RFID value printed and encoded into each tag. Also, the carton number was printed on the tag to help the manufacturer's employees visually identify a carton if needed.

The software consisted of three pieces – desktop application, cloud-based database and a reporting dashboard. The desktop application was used to build a shipment; entering the required information so it can be uploaded to the DoD's system. Also, the desktop application was used for reading the garment and carton level tags to make proper association. Finally, the application was used to upload the required data to the DoD VIM system. All information was securely stored in a cloud database for reporting, ensuring management can make changes regardless of their location. The dashboard is used by management to view reports of past or present shipments. As of 2022, the system has accurately helped the manufacturer deliver over 900 shipments to the DLA.