



How a Large State Department of Adult Correction Modernized Radio Asset Tracking with RFID

A public safety department responsible for all the correctional centers in North Carolina needed to find the right RFID tag and software system that could help them better track over 30,000 radios. HID and Entigral delivered.

The North Carolina Department of Adult Correction (NCDAC) headquartered in Raleigh oversees over 100 correctional facilities across all of its counties. One of the most important assets are the radios that guards and management use to communicate within the facilities.

With thousands of staff members, there is a need for thousands of radios — radios that, overtime, need to be assigned to the right individual, upgraded or repaired and eventually replaced.

This means that NCDAC needed a way to track radios as they move throughout their lifecycle. At first, they turned to a homegrown solution developed in Microsoft Access. But due to the sheer volume of radios moving in and out of commission, NCDAC realized quickly that they needed something more robust and automatic.

“We have thousands of radios across a hundred locations,” said Eric Shearin, Manager of Radio Communications at NCDAC. “We knew it was time to modernize our tracking solution so we could improve visibility into our massive inventory.”

To find this solution, NCDAC reached out to Entigral Systems, an Asset Vue Company, a software solutions provider that has specialized in RFID for over 20 years. Entigral's software, TraxWare®, helps organizations with tracking of inventory and asset management.

“Everyone has assets, they just need to know where they are,” said Allen Bennett, Sales and Professional Services at Entigral. “We met with management to determine what type of data collection technology was needed to address their tracking challenges. If RFID is a candidate, we first go in and verify that the physics of a tracking solution could support the application. From there, we put together a total solution with our over 20 years of experience that combines hardware, software and media.”

For NCDAC, it was clear to Bennett that the answer for NCDAC was using augmenting a data collection solution with RFID technology.

Since the department’s top initiative was modernizing and automating their radio tracking, RFID was the natural evolution to create a seamless process and stable database of inventory.

But a stable database requires just the right RFID tag — and Bennett knew exactly who to call.

 RFID	 BARCODES
Automatic; Creates audit trail & traceability	Manual; Requires human intervention & leads to inconsistency
Many assets can be identified with a single scan	Assets can only be identified one at a time
Does not need line of sight to be read	Needs line of sight to be read
RFID tag is more secure to the asset and the data/serial number stored in the tag will stay through the life of the asset	Barcode can be peeled/rubbed off or degraded over time, especially when on a handheld asset like a radio

LONG TERM PARTNERS

“We’ve worked with Vizinex, now part of HID, for many, many years,” said Bennett. They are an industry leader in developing and manufacturing high-performance RFID tags for industries in which accurate, efficient asset tracking is mission-critical.

RFID tags provide an automated way to identify and locate assets in seconds without the risk of error-prone human intervention. The technology relies on radio waves to automate data collection, enabling users to easily track an asset’s location and utilization.

HID and Entigral collaborated to deliver the right RFID tag and tracking system to NCDAC, but this was no simple undertaking.

“Matching environment is so important to the application. This is where HID shines.”

Allen Bennett, Entigral

Top Benefits of RFID Asset Tracking:

- Eliminates human error
- Increases asset visibility
- Maximizes workplace efficiency

FINDING THE RIGHT TAG

Finding the right tag for a specific application — especially a high-volume inventory of metal-based assets — is no easy job.

For NCDAC specifically, the biggest challenges had to do with tag placement and size, compatibility and implementation.

#1 TAG PLACEMENT AND SIZE

NCDAC needed a tag that was small enough to fit under the plastic of the radio cover very close to metal while still providing a good read zone to detect tags in a batch fashion.

#2 TAG COMPATIBILITY

"A lot of people think RFID tags are like barcodes," said Bennett. "Just grab one, attach it to the asset and read it. But matching environment is so important to the application. This is where HID shines.

Factors to consider when selecting an RFID Tag:

- The tag's environment (indoor vs. outdoor, industrial processes, chemicals, etc.)
- Material compatibility (metal, plastic, etc.)
- Read range requirements

"I had an idea of what tag to go with, but new tags are created all the time, and I wanted to make sure that NCDAC had the latest and greatest," said Bennett. "I talked it through with the team at HID to confirm the application and what tag to use."

#3 IMPLEMENTATION

Every NCDAC radio looks the same, which means before they could be set up with RFID technology, they needed to be serialized.

"The challenge was using fewer touches to get a correct inventory level of our radios at any given time," said Shearin. "We needed to serialize thousands of radios in order to efficiently track them as they are issued, as they come in for repair, as they go back into inventory, as they are sent for reuse, and beyond.

There were a lot of moving parts and details to get right when it came to selecting and implementing the right tag, but NCDAC was confident in Entigral and HID's industry expertise and long-standing relationship. Now for the even trickier part — actually implementing the complete RFID solution.

A PHASED PROCESS

The main priority of the RFID system implementation process was to minimize business process disruption while making sure radios get tagged and the tracking system gets updated to reap the benefits of the solution in a timely manner.

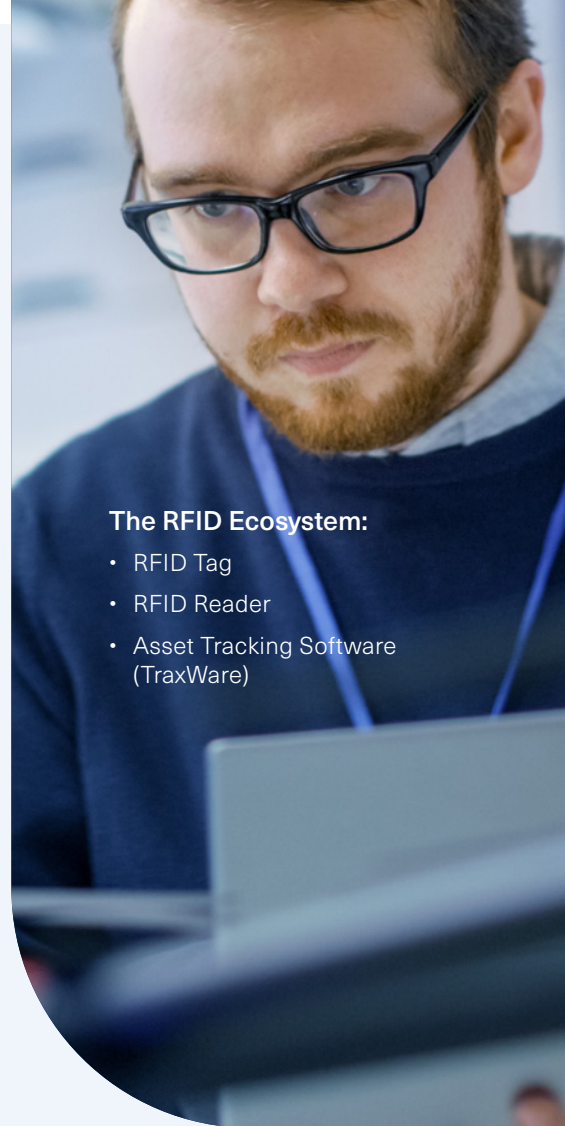
To accomplish these goals, HID and Entigral took a phased approach:

#1 PHASE OUT RADIOS

It would be too disruptive to take every radio that is working out of commission all at once.

So, as radios naturally progress through their lifecycle — coming in for repair or retirement — NCDAC planned to send out upgraded or new radios with the RFID tags and technology.

"One center will send in a batch of radios, and we'll send the same number back with the RFID tag so they can track them accordingly," said Shearin. "To the tune of thousands of radios that need to be refreshed or replaced over the next several years."



The RFID Ecosystem:

- RFID Tag
- RFID Reader
- Asset Tracking Software (TraxWare)



Sentry 4607 RAIN RFID Tag

- Metal-On-metal use case
- 46mm x 6.9mm x 1.7mm
- Up to 13ft (4m) Read Range
- Low profile, providing ergonomic compatibility for hand tools

#2 IMPORT DATABASE INTO TRAXWARE

The software implementation process is happening in lockstep with the radio phase-out and upgrade process.

"We exported the entire database off the old Access system and imported it into TraxWare," said Bennett. "The old database has the old radio serial number in there — they're just not connected to RFID yet. When the radio comes into repair, it is then associated with RFID."

TraxWare supports the features NCDAC needs that the homegrown Access database simply can't support. It allows NCDAC to effectively track repair services and see a full history of every transaction involved with the radio — what was done to a radio for repair, if it's still good to be used or needs to be returned to the vendor, and so on.

#3 TRAIN USERS

There is more to implementing an RFID system than just finding the right tag and implementing the right software. NCDAC staff also needed to be trained on using RFID.

"A common roadblock with making a RFID solution work is stray management," said Bennett. "You want to read tags that you're supposed to but not any tags you're not supposed to. If you have a box of 10 radios, but 3 are sitting off to the side and you end up scanning 13 — that's not good. The user needs to understand how to segregate items so that doesn't happen."

GETTING RESULTS

To date, about 4,000 radios have been refreshed with RFID — with over 20,000 more to go.

"The results are very positive so far," said Shearin. "We have more visibility in the inventory of assets that have gone out tagged, returned for repairs and been resubmitted into the field. We're gaining more and more visibility every day as more radios have been 'smartened' for tracking purposes."

This is only the beginning for NCDAC. After previewing the amazing benefits of an RFID system for their radio division, NCDAC is already looking for more opportunities to modernize asset tracking.

"We're now working on phase two in a different department: tracking vehicles at our facilities," said Shearin.

For state departments balancing many priorities and important assets, having a system that can provide actionable, accurate and real-time information about those assets is crucial. With RFID, state departments can streamline their processes and enhance traceability better than ever before.



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