



**OKLAHOMA
TURNPIKE
AUTHORITY**

Case study **Oklahoma Turnpike Authority**

Automated Asset Tracking System

Oklahoma Turnpike Authority's computer and network data centers required accurate tracking of over 1,200 servers, blades, enterprise routers, storage units and other high-value IT hardware.

Omni-ID
Intelligent Tracking & Monitoring Devices

In partnership with
LOWRY

omni-id.com



The Oklahoma Turnpike Authority (OTA) is an instrumentality of the State of Oklahoma (the State) and a body corporate and politic created by statute in 1947.

Address

Oklahoma City, Oklahoma, U.S

Industry

Government

The authority's computer and network data centers require accurate tracking of over 1,200 servers, blades, enterprise routers, storage units and other high-value IT hardware to manage financial compliance, maintenance, and utilization.

Manually tracking and managing information technology assets and inventory was time consuming, error prone, and an administrative burden.

As IT assets grew, manual inventory tracking was no longer up to the task.

Driving Toward Savings: Automated Asset Tracking System Helps Transportation Agency Save Time, Cut Costs, Improve IT Asset Management

The Oklahoma Turnpike Authority (OTA) is an agency of the State of Oklahoma authorized to construct, maintain, repair and operate turnpike projects and highways. The Authority receives revenues from turnpike tolls and a percentage of the turnpike concession sales.

In terms of asset tracking, the Authority has a priority to keep an accurate inventory and management of all IT hardware, data servers and other information technology equipment. Tracking data servers and related computers, storage devices, network hardware and test equipment is critically important to the OTA.

Outdated or incorrect inventories can contribute to long audit cycles and divert resources from more pressing projects. Annual inventories that are weeks or months old are problematic for reconciliation purposes.

Past Methods**Looking for a Better Way**

Until recently, The OTA was challenged to efficiently and accurately track information technology assets and inventory of over 1,200 data servers, blades, enterprise routers, storage units and other high-value IT hardware housed in the OTA server room.

The challenges stemmed from having to rely on a highly manual asset tracking method that was both time consuming and error prone. Staff had to be allocated to physically generate an asset list by performing manual inventory counts, visually locating and verifying all assets. Staff was pulled away from their other duties to perform the cumbersome process of manually identifying, recording and documenting all IT assets throughout the Authority's data centers.

The OTA knew that the manual methods resulted in many limitations. It took too much time to manually hunt assets down and then record the information in a manual document. In

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“Time savings were evident immediately. Accuracy is also dramatically improved.”

In addition, the manual inventories caused a huge drain on technical resources and had the potential to introduce inaccurate data into operational management processes. When the cost of these activities were taken into account, the actual total cost of physically tracking assets, checking for errors, and manually record keeping was prohibitive.

To address these limitations, and more accurately and efficiently manage IT assets, OTA sought to automate the process of the semi-annual data center inventory. The OTA's goal was to save both time and effort, and reduce the costs of the manual inventory process.

Specifically, the organization sought a “Geiger counter” approach in which a staff person would enter into the data center area and simply activate automatic reads of the tagged assets with a mobile reader.

Since the Authority wanted to conduct inventory of assets without having to directly and individually locate and scan the tag, bar-coding systems were not considered as a viable solution. Unlike bar-coding, RFID tagging does not require line-of-sight or limit the simultaneous reading of multiple tags. RFID enables the Authority to run the tags past a reader and data is returned.

The OTA determined that the most optimal solution would be a fixed reader mounted in the main entry doorway of the server room to track the movement of data servers as they move in and out of their primary location in the server room. The mobile client would be used to audit the server room on a scheduled basis. The system would check in and check out equipment to employees to track who has responsibility and possession.

Additionally, a long term goal of OTA is to also use the system to track other valuable equipment and components of the Authorities asset base including bridges, signs, guide rails and other equipment used in the field to maintain the turnpike.

The Solution

Omni-ID RFID tags, pre-programmed RFID tags

Lowry's AssetTracker Pro web-based solution for automatic asset location movement using fixed RFID readers, a mobile client for asset lookup and auditing in the field and a web interface for reporting and assets maintenance functions.

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OTA selected Lowry's AssetTracker Pro which is an internally hosted web-based application offering components for automatic asset location movement using fixed RFID readers, a mobile client for asset lookup and auditing, and a web interface for reporting and assets maintenance functions. The system is a stand-alone solution with no legacy host integration.

OTA implemented various hardware components including Motorola XR series fixed RFID readers and Motorola MC9000G RFID Windows Mobile terminals. The system uses the RFID tag as a key to track data in the system database such as asset name, serial number, part number, manufacturer, location/building, purchase date, purchase order used to purchase the asset, purchase cost, description, etc.

The initial process got underway by tagging all the IT assets housed in the OTA data center and setting up the transition to the new methods. A team tagged each IT asset with Omni-ID RFID tags, pre-programmed RFID tags. The handheld reader devices were then used to assign the tag ID to the asset at the time of original tag placement.

OTA created a data file from their host system in a format consistent with the Asset Tracker Pro, and the Lowry implementation team then imported the data into the system at the time of installation. All assets were originally tagged with an Omni-ID RFID tag that was reprogrammed with the legacy asset number and used as the primary key. All told, over 1200 items were tagged, and are now tracked with the initial implementation of the Asset Tracker Pro.

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Tag Specifications

While it was an easy process to populate all of OTA's existing asset data by using the application's import function, Lowry was able to accommodate OTA's unique tagging requirements.

Many of the assets are network-based servers that are rack mounted with limited "real estate" to position a RFID tag for easy, automatic and accurate reading.

While the initial offering of OMNI-ID tags met the requirements for many of the OTA assets, experience proved that one size/one type of RFID tag is not optimal for an accurate read given the challenging space constraints and accurate read range demands. In addition, the servers are slim line rack style servers with limited space on the face of the server for tagging because of the CD drive door, etc. The metal racks often cause interference issues.

The metal characteristics of the majority of the assets required special attention and a unique RFID tag solution. Lowry and OMNI-ID were responsive to OTA's specific requirements by offering a wider size and performance range of RFID tags that improved the read ranges, read accuracy and reduced the footprint while improving resiliency to the negative impacts of metal.

"A key achievement since automating IT asset tracking is the dramatic time savings and reduction of cumbersome, manual methods."

The ability to effectively track items on and around metal makes Omni-ID tags ideally suited for IT asset identification within data centers and other harsh environments. Beyond tracking, Omni-ID tags also enable accurate asset management to enhance overall utilization and optimization of high value assets. The Omni RFID tag selected performed the best and the small square shape of the tag helped in mounting on the limited area of the server's face.

The Results Benefits and ROI

The OTA now completes asset inventory in half the time.

RFID technology allowed the authority to increase the efficiency of tracking requirements without the line-of-site burden of bar codes. Additionally, RFID tagging delivers a level of data to enable highly detailed tracking of specifications and maintenance activities.

The RFID based solution met the expected requirements of improved accuracy and more efficient IT asset management.

A key achievement since automating IT asset tracking is the dramatic time savings and reduction of cumbersome, manual methods. The process is fully automated, with no line of sight scanning required and no cumbersome management of paper-based records. The OTA reports it was able to complete asset inventory in half the time.

Time savings were evident immediately. The seamless import of legacy data resulted in reduced time of implementation. It was noteworthy that the transition and launch of the new system took less than half the time once needed for the manual semi-annual inventories. Now, with the new methods, tracking IT inventories is effortless. More efficient location tracking of IT assets and their movement leads to less time spent tracking them down.

Accuracy is also dramatically improved. The OTA eliminated the need for manual calculations, the potential for error that comes with duplicate data-entry and possible transposing when calculating. Check in and check-out functionality allows for keeping track of who has/had the equipment during its history. This accuracy leads to improved asset management. Since it is now easier to locate IT assets, the OTA can better utilize those assets. Procurement is more strategic, and the IT team is better able to use IT assets more effectively.



Designed



High UV tolerance



Label should adopt as little dirt as possible (slippery/low moisture absorption)



Weight below 23 grams



Label pull strength above 15kg



If the label is removed, it should be visibly damaged and not be reusable



RFID performance should be the same or better as with the red tag



Tested



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



Visit www.omni-id.com to learn more or email sales@omni-id.com for all product or technology inquiries and we will be pleased to get in touch.

Omni-ID is the leading supplier of passive, low-profile UHF RFID solutions. Through our patented technology, Omni-ID "cracked the code" to overcome the problems traditionally associated with RFID, enabling a broad range of new applications that improve accuracy and efficiency in asset tracking, supply chain management and work-in-process. Our family of versatile RFID tags works reliably in the harshest environments, including on, off, and near metal and liquids and excels in solving tracking and identification challenges with unprecedented accuracy. With offices in the USA, UK, Asia and India backed up by a purpose-built manufacturing facility in China, our mission is to drive the widespread adoption of RFID and wider IoT technologies as the optimal tracking and identification devices.