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ESSEN

CASE STUDY

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قطر تستحق الأفضل
Qatar Deserves The Best

Public Works Authority in Qatar adopts RFID-enabled ASSET TRACKING SYSTEM

Efficient organization and tracking of assets

Optimized location-wise asset management

Easy hand-held device application with Wi-Fi connectivity

Quick and up-to-date asset inventory with live status information and automated reports

INSIDE:

TECHNOLOGY

Solution:
EPC Gen2 compliant asset tracking solution

Tag Type:
Metallica™ UHF Passive
μMetallica™ UHF Passive

Reader/Antenna:
HandyScanna™

Method:
Single Tracking via hand-held Reader/Antenna

Integration Platform:
RFID Middleware:
Xtenna™ WebToolkit
Xtenna™ Studio
Application: Essen RFID's Asset Tracking System
Database: SQL Server 2005 Exp. ed.

Tag Manufacturer/Supplier:
Essen RFID, with US based chip inlay

Reader/Antenna Manufacturer:
Essen RFID, with US based module

Systems Integrator:
Essen RFID

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Xtenna™ Integrated RFID Antenna/Reader

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KEY REQUIREMENTS:

Ashghal is the Public Works Authority in Qatar, responsible for the planning, design, procurement, construction, delivery and asset management of all infrastructure projects and public buildings in the country. Ashghal's key responsibilities include governing the design, construction and management of major projects including roads, drainage and buildings such as public buildings, schools and hospitals.

Since the organization made extensive use of various assets, especially IT assets, a need was felt by them to efficiently track their assets, quickly search and maintain an inventory log for audit purposes.

Main challenges in implementation:

- Efficient and quick search of required assets at the location.
- Checking the availability of each asset.
- Efficient maintenance of asset inventory.
- Prevention of assets being misplaced, along with missing asset alerts and full data to the supervisor.
- Tracking of assets with date, time and location details.

SOLUTION:

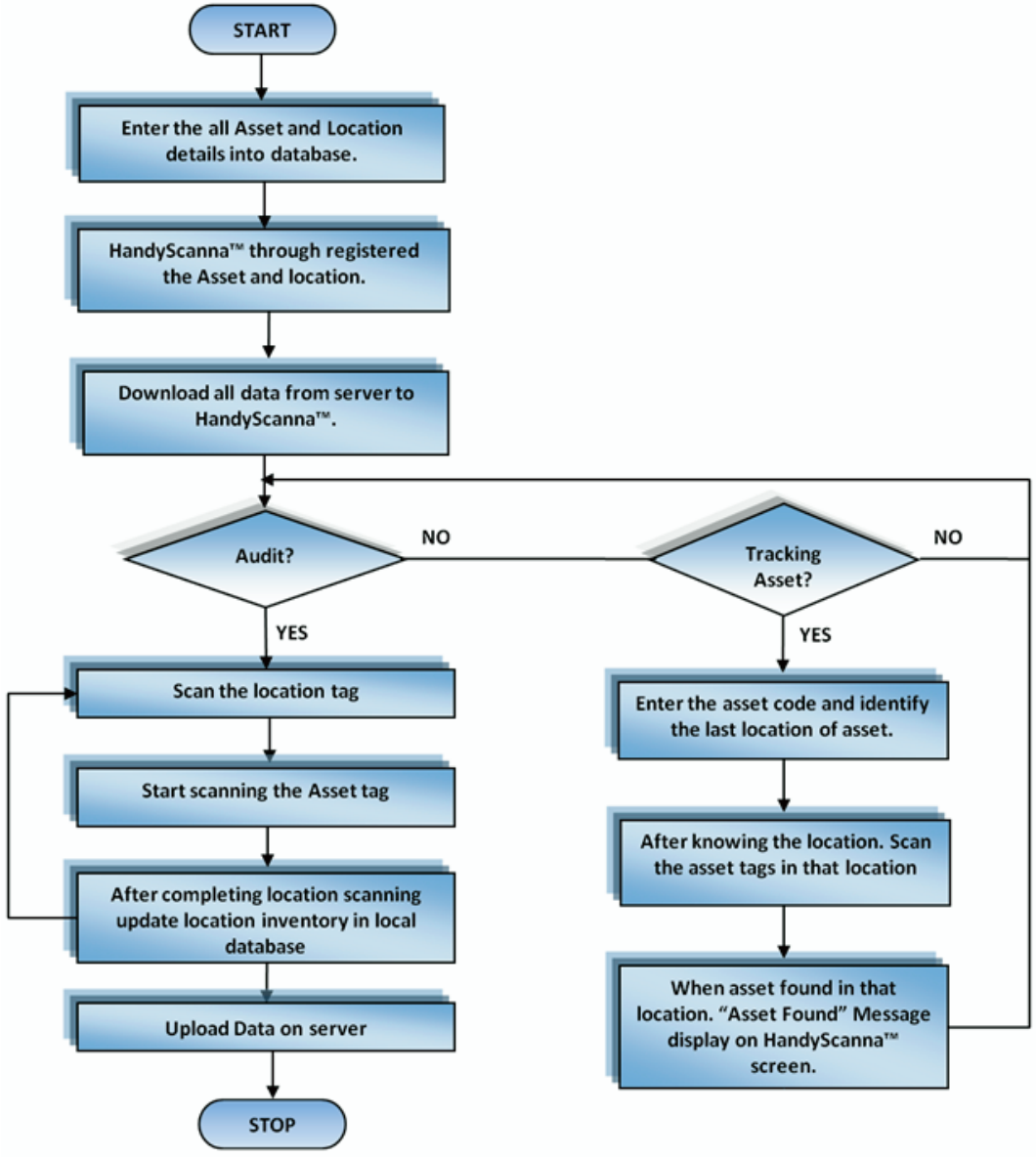
Essen RFID provided an efficient solution for tracking of these assets through its RFID based Asset Tracking System, ASTRAX. This system deploys a mobile-based application built into a hand-held HandyScanna™ RFID device to scan and search each asset. It tracks assets that have been affixed with RFID tags, and maintains and updates status records in the database.

IMPLEMENTATION:

Each asset location within the premises is defined in the Asset Tracking System and is assigned a METALLICA™ RFID tag which is affixed at that particular location. A μMETALLICA™ RFID tag is affixed to each asset item that is to be tracked. The assets are registered into the system database using a HandyScanna™ hand-held device. The HandyScanna™ is also used for tracking the assets at their various locations. This device contains a mobile-based application which is used to scan the details of each asset and then search its allocation, placement and retrieval. HandyScanna™ utilizes Wi-Fi connectivity to upload and download data from the Server. SQL Server is deployed as the bank-end database for storing data.

WORKING:

Flowchart – Asset Tracking:



Application Process:

Essen RFID's Asset Tracking Software ASTRAX™ replaces manual processing and brings accuracy and transparency into the process.

1. All asset details such as asset code, name, description and location are saved into the database.
2. Similarly, location details such as location name, description and code are also saved in the database.
3. A METALLICA™ RFID tag is affixed to each asset location.

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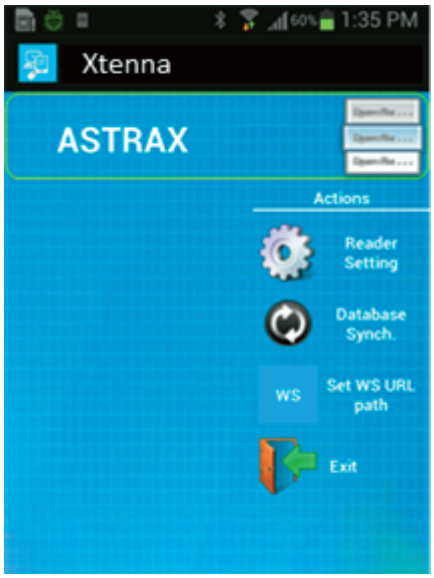
4. A μMETALLICA™ RFID tag is attached to each asset to provide each of these assets with unique identification.
5. Data is downloaded from the server into the operator's HandyScanna™ hand-held device.
6. Using the HandyScanna™ device, the assets and locations are registered into the database.
7. The registered HandyScanna™ data is then uploaded onto the Server.
8. The HandyScanna™ is synchronized with the Server through Wi-Fi.
9. The inventory of assets is audited through the HandyScanna™ device. The operator scans a location with its available assets. During inventory audit, if assets that are newly found then these new details are saved in the HandyScanna™, whereas when the already available assets are scanned, their date, time and location is updated.
10. Similarly, all locations are scanned for assets. After the inventory audit is complete, the HandyScanna™ data is synchronized with the Server using Wi-Fi connectivity.
11. After the audit data is uploaded to the Server, the operator can view the inventory audit data report.
12. The asset can also be tracked if there is no information about its location. The operator refers to the last available location on the HandyScanna™ and goes to that location to scan for the asset's presence. If the asset is found, then an 'Asset Found' message is displayed on the device screen.

Application Flow:

Before using the ASTRAX application on the HandyScanna™, the configuration needs to be set. This consists of Setting the Reader and Setting the Web Service URL Path.



Reader Setting: This enables the user to set the read and write power of the HandyScanna™ device, the region, and the antenna mode i.e. whether bistatic or monostatic, etc.

Set WS URL Path: The HandyScanna™ device uses a Web Service for synchronizing data with the Server. Before using HandyScanna™ the Web Service URL is to be set up here.

Database Synchronization: After setting the Web Service, the user can synchronize the Server data with HandyScanna™.

Before downloading the data, a confirmation message is displayed to start the downloading process. After downloading has been successfully completed, the user can log in to the ASTRAX Asset Tracking application.

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The ASTRAX application performs the following actions:

- Asset Register
- Location Register
- Audit
- Tracking
- Synchronization

Asset Register: The operator enters the asset code and searches the asset. From the search list, the appropriate asset is selected and its details get displayed on the device screen. The operator then scans the asset's μMETALLICA™ tag, selects the asset custodian's name and saves the data into the device. This data will get updated into the Server when the HandyScanna™ is synchronized with it.

Location Register: The operator selects a location from the location list, then scans the METALLICA™ tag affixed at that location using the HandyScanna™ and saves the data into the device.

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Audit: Inventory Audit is the inventory taking process that checks whether all assets are at their proper location. If there is a new asset or a particular asset has been misplaced or is shifted to a new location, then this revised location data gets updated in the database.

The operator selects the Audit option in the application and first scans a location tag and then scans the asset tags available at that location. The device display screen shows a live summary of the scanning process, such as total asset count, assets found, assets not found, misplaced assets, registered assets and unregistered assets. After the location is scanned, it is updated into the local database.

The operator then moves to the next location and repeats the process. After scanning at all locations has been completed, the local data of inventory audit is uploaded to the Server using the Synchronization function.

Reports:

The ASTRAX Asset Tracking System generates convenient browser based reports for the system admin which are helpful in efficient maintenance of assets and decision making based on accurate data. These reports are generated for asset details, location details, location-wise asset scanning results, periodic reports and alerts.

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BENEFITS:

- Efficient organization of assets at various locations within the premises.
- Efficient and optimum utilization of assets and streamlined functioning.
- Quick and easy asset search results in time and labour savings.
- Easy tracking of inventory and up-to-date status information.
- Quick, accurate and efficient inventory audit.
- Transparency in inventory auditing operations.
- Live scanning summary of asset search.
- Easy synchronization to Server through Wi-Fi connectivity.
- Automated report generation for supervisors and administrators.

LINKS:

Hardware:

Handy Scanna™

Tags:

METALLICA™

μMETALLICA™

Software:

Xtenna WebToolkit™

Xtenna Studio™

Reference Examples:

http://www.essenrfid.com/Mailer/asset-inventory-flash-demo.pdf