



## Premier national research institute adopts a RFID-based ASSET TRACKING SYSTEM

Efficient location-wise organization and tracking of assets

Easy asset search and effective status monitoring

Efficient on-site management of assets through on-the-spot data updation

Automated missing alerts to management



INSIDE:

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### TECHNOLOGY

#### Solution:

EPC Gen2 compliant asset tracking solution

#### Tag Type:

Metallica™ UHF Passive  
Genera™ UHF Passive

#### Reader/Antenna:

Xtenna Proximity™  
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

For further details contact:

#### Essen RFID

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## CASE STUDY

### KEY REQUIREMENTS:

The Tata Institute of Fundamental Research (TIFR) is one of the foremost research institutes in India. Its research labs contain a vast variety of equipment that is required by different researchers across disciplines. These assets need efficient organization and management by laboratory supervisors in order to make optimum utilization of time and resources. Since a particular asset can be urgently needed at any time, it is important that it be efficiently tracked and immediately located from amongst various similar types of equipment. The institute required prompt identification regarding location and availability of assets and needed to efficiently track these large quantity of high value assets to prevent misplacement, enable instant search and optimized utilization.

Main challenges in implementation:

- Proper organization of assets within the premises.
- Keeping track of the location of each asset.
- Ensuring quick search of required asset amongst different types of similar assets at a particular location.
- Enabling association of assets based on components or accessories to larger assets in a parent-child relationship, if required.
- Ensuring a quick match of components/accessories to their main devices.
- Checking the availability of every asset from amongst several assets.
- Prevention of assets being misplaced or taken out of their assigned locations through missing asset alerts to the management.

### SOLUTION:

A RFID based Asset Tracking System developed by Essen RFID is the solution offered to efficiently track these assets. This system deploys a mobile-based .NET application built into a hand-held RFID device to scan and search each asset. SQL Server is used as the backend database.

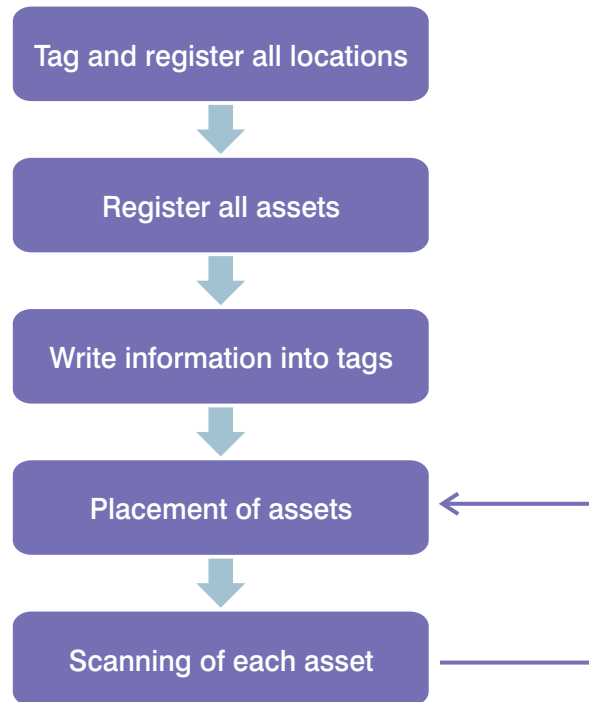
### IMPLEMENTATION:

METALLICA™ RFID tags are affixed at each laboratory location within the premises, including at exact sub-locations such as room, rack and shelf. A GENERA™ or METALLICA™ RFID tag is attached to each asset or asset component/accessory that is to be tracked, the choice of tag being dependant on the type of asset. The assets are registered into the system database using a Xtenna Proximity™ antenna-reader. A hand-held HandyScanna™ device containing a mobile-based application is used to scan the details of each asset, allocate its placement and effect its retrieval for its utilization. The HandyScanna™ functions and communicates with the central server over a Wi-Fi network.



## CASE STUDY

In order to enable a quick and efficient search of assets through RFID, the implementation required an initial organization of assets and locations using RFID, in the following sequence:



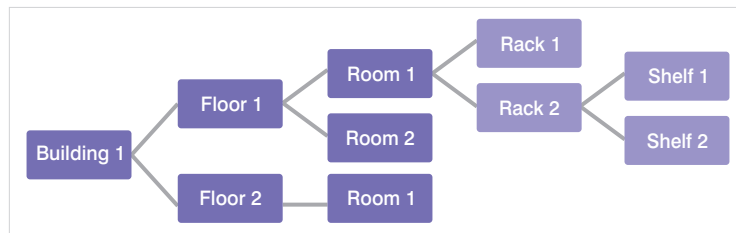
## WORKING:

1. Xtenna Proximity™ is used for registering the tags for each asset into the database. Registration information consists of asset code, asset name, description, manufacturer, warranty period, image of equipment, etc. This information is written into the database and associated with the respective tag, which is then attached to the particular asset. GENERA™ RFID tags are used for this purpose, except in case of fully metallic assets which are affixed with METALLICA™ RFID tags.
2. Asset locations are entered into the Asset Location Master database along with their location hierarchical representation giving their exact location, e.g. a building has multiple floors and each floor has multiple rooms, etc. These location sub-levels help to pinpoint the exact placement of each asset right down to rack and shelf. A METALLICA™ RFID tag is affixed at each location level and sub-level and assigned to those locations in the database, using either a Xtenna Proximity™ reader or a HandyScanna™ hand-held device.

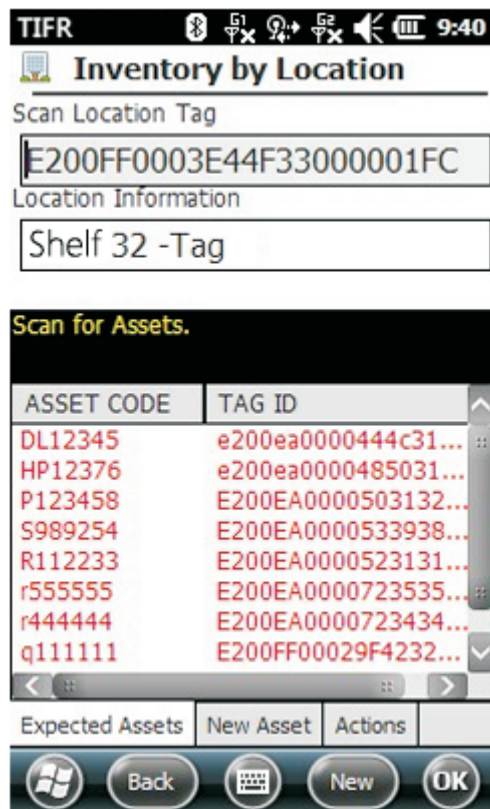




## CASE STUDY



3. The assets are now placed at their proper location, and using the hand-held HandyScanna™ device, the location tag and the asset tag are both scanned and the asset is assigned to that particular location in the database.



4. If required, each asset accessory or detachable component is also registered into the database through a parent-child relationship with its parent asset. This allows the association of each accessory with its parent equipment. Thus when a parent asset is searched, its child assets are also listed and verified.
5. Once all assets are in their proper location, then using HandyScanna™ an asset can be searched in very little time. If information is required regarding a particular asset, the supervisor can scan the asset tag and the relevant information is displayed on the HandyScanna™ screen. Using the Asset Tracking software and the HandyScanna™ device, the supervisor can track the availability of all assets location-wise on a daily basis.



## CASE STUDY

The process is as follows:

The supervisor scans the METALLICA™ tag of the location. This displays a list of assets at that particular location on his HandyScanna™ screen. He then scans the assets at that location. On scanning the tags, each asset displayed in RED turns to BLUE on screen as it gets tracked by the device. If any asset is not found, it continues to be displayed on the list in RED colour.

Inventory by Location

Scan Location Tag

E200FF0003E44F33000001FC

Location Information

Shelf 32 -Tag

Scan for Assets.

ASSET CODE	TAG ID
DL12345	e200ea0000444c31...
HP12376	e200ea0000485031...
P123458	E200EA0000503132...
S989254	E200EA0000533938...
R112233	E200EA0000523131...
r555555	E200EA0000723535...
r444444	E200EA0000723434...
q111111	E200FF00029F4232...
X69691	E200EA000005836...

Expected Assets New Asset Actions

Back New OK

Inventory by Location

Scan Location Tag

E200FF0003E44F33000001FC

Location Information

Shelf 32 -Tag

Scan for Assets.

ASSET CODE	TAG ID
HP12376	e200ea0000485031...
P123458	E200EA0000503132...
S989254	E200EA0000533938...
R112233	E200EA0000523131...
r555555	E200EA0000723535...
r444444	E200EA0000723434...
q111111	E200FF00029F4232...
X69691	E200EA000005836...

Expected Assets New Asset Actions

Back New OK

If a new asset is found at that location, the supervisor can reallocate the revised location for that asset.

Inventory by Location

Scan Location Tag

E200FF0003E44F33000001FC

Location Information

Shelf 32 -Tag

Scan for Assets.

Add New Assets to Location

Expected Assets New Asset Actions

Back New OK

Asset Log

Total Assets 12

Total Locations 6

Total Assets Detected 1

Total Locations Scanned 2

Inventory Completed

BACK OK

After completing the scanning process at all locations, the supervisor can view the Asset Log displaying a summary information of total counted assets and locations.

Once scanning is completed, if an asset is not found at any location, then details related to all such missing assets are automatically emailed to the administrator.





## CASE STUDY

### BENEFITS:

- Efficient organization of assets at their proper location.
- Efficient location-based tracking of assets.
- Enables organization of accessories as sub-assets of a particular asset in a parent-child relationship.
- Easy search for any particular asset within assigned locations.
- Prompt availability of assets whenever required.
- On-the-spot data updation at asset location site.
- Enables effective status monitoring of assets and inventory synchronization.
- Optimum utilization of assets and streamlined functioning.
- Missing asset details automatically emailed to administrator.

### LINKS:

#### Hardware:



#### Tags:



#### Software:



#### Reference Example:

<http://www.essenrfid.com/Mailer/Inventory-flash-demo.pdf>