

## RFID Item Finder

# iFind

## RFID Item Reminder

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### What is iFind?



iFind allows users to locate misplaced items and to ensure they have everything they need when leaving a location.

#### Scenarios:

- Professor doesn't want to leave his office without his laptop
- Building administrators don't want people to leave building with restricted items
- IT staff need to find out where the office printer was moved

### Background

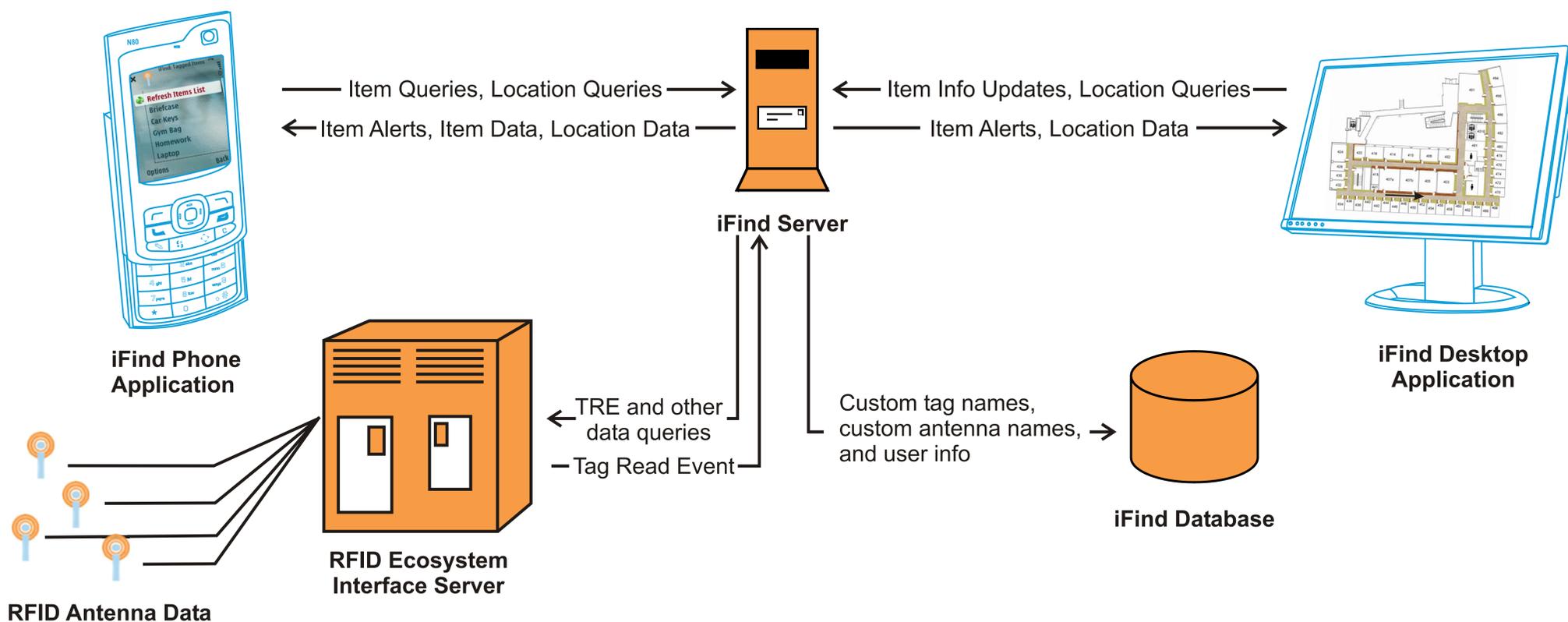
RFID is a technology that incorporates the use of electromagnetic coupling to uniquely identify an object, animal, or person. An RFID system consists of three components: an antenna and transceiver (often combined into one reader) and a transponder (the tag). The antenna uses radio frequency waves to transmit a signal that activates the transponder. The RFID tag can automatically be read from several meters away and does not have to be in the line of sight of the reader.



An RFID Antenna



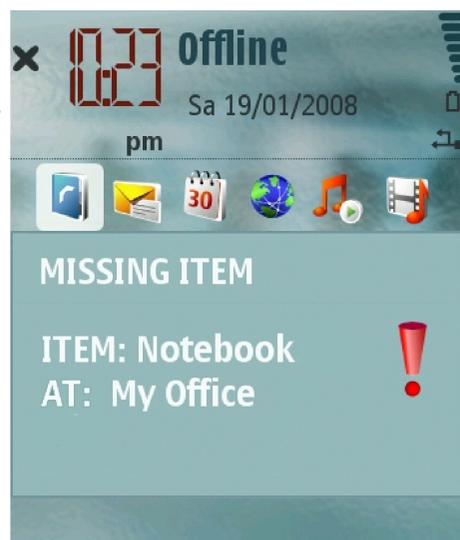
An RFID Tag



### Evaluation

To Evaluate iFind we will be looking at:

- How quickly we can receive alerts of forgotten items at various locations
- Read all the tags a user is carrying
- Accurately communicate between all the system components as well as the RFID interface



### Related Work

There have been many studies and ideas posed about utilizing today's technology to aid in reminding users about events as well as to help users locate missing items. Some of these studies have included:

- Using RFID ecosystem to alert users of forgotten items through a wrist watch and portable server.  
"Reminding About Tagged Objects Using Passive RFIDs"  
Borriello, G., Brunette, W., Hall, M., Hartung, C., & Tangney, C.
- Using tag readers and static tags in an RFID ecosystem to locate items  
"LANDMARC: Indoor Location Sensing Using Active RFID."  
Balliger, P., Frank, C., Kellerer, W., & Roduner, C.
- Using an RFID item tracker to locate patients, equipment, and alert nurses of restricted items leaving assigned areas.  
"Using RFID Tags for Tracking Patients, Charts and Medical Equipment within an Integrated Health Delivery Network" Jessen, D., Qiu, R., & Sangwan, R.