White Paper: InvenCheck3000 used in Emergency Equipment Tracking Services
By Intensecomp, Dec 2005

Overview: RFID Asset Management Using InvenCheck3000

Equipment maintenance and inspection of existence is a critical aspect in any emergency services namely fire engine services, critical emergency services, civil defense department, ad-hoc emergency facilities and many others. Crucial hours spent to maintain and prepare for any case of emergency. In many cases, daily inspection is performed on the equipment health and existence. These preparation plays important role during emergency period as every piece of equipment must be in tip top conditions and able to operate when required. This reason alone justified the huge amount of time and resources spent on equipment maintenance.

Majority of the inspection work is performed manually where the maintenance personnel will have a worksheet containing the full list of equipment available or required for a particular location or vehicle. During inspection, equipment is manually inspected and manually mark to indicate complete of inspection on the inspection paper. At the end of inspection, the information captured is manually retyped into PC for data entry into back end system database for report generations. This process is tedious and prone to error.

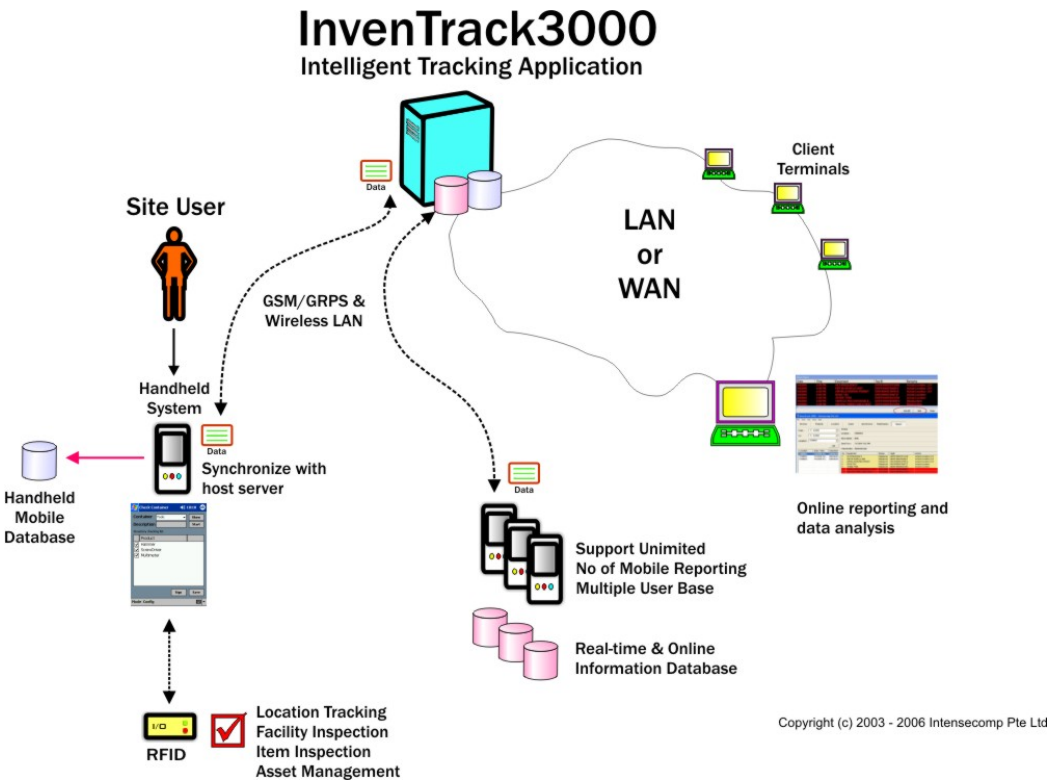

Figure 1: System Overview

About RFID

RFID or Radio Frequency Identifications technology is a wireless technology where it provides automatic identifications to individual items. It requires no light of sight and multiple RFID tags can be read at any one time. This technology consists of RFID tags, RFID scanner and RFID software system. Data stored in the RFID tags are read by the RFID scanner. In turns the RFID scanner will update all data captured to the RFID software system for report generation, data archiving and others.

InvenCheck3000

InvenCheck3000 is a RFID (Radio Frequency Identification) based solution for inventory checking and stock taking. InvenCheck3000 comes with complete software and hardware system where user can perform quick inspection on individual equipment and record inspection status on the mobile computer. It also helps to keep record of date time of inspection, comments on inspection items, person doing the inspection and many others. Data captured is uploaded into the backend database system via wireless connection to the backend server. Reports can be generated automatically and the software can also capture signature of the person performing the inspection. This is made possible by an intelligent signature algorithm built-in the software.

Application

In this application, InvenCheck3000 is being selected to enhance inspection facility at the fire engine emergency services department. Every item on the fire engine is tagged with RFID tag (see picture). The RFID tag gives unique identification to each item. Information such as location of the item, types of items and others are captured by the system as well as the RFID tags.

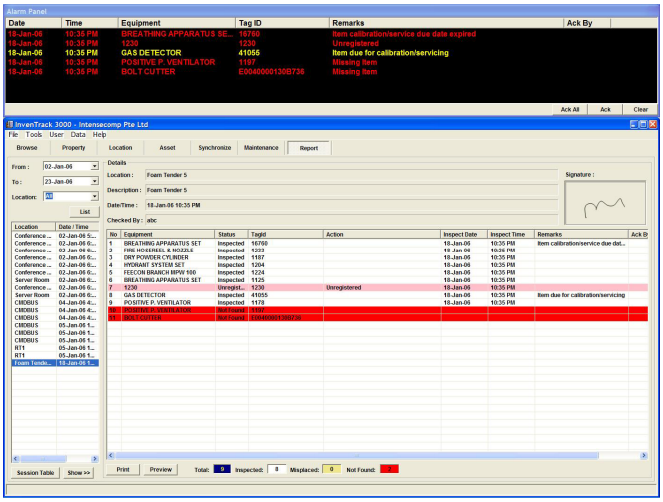

Figure 2: Main Application Screen

A database of all items is created based on existing manual inspection list available. The database setup is fast as InvenCheck3000 provide facilities to import the data in mass. Individual items are tagged with RFID tags and registered with relevant information related to the equipment. Data such as service due date, calibration date, equipment expiry date, warranty due period and other critical information. This information will be useful during daily inspection. InvenCheck3000 is design to provide alarms and alert the user whenever any of the critical conditions is breached. For example, alarm will be sounded if a crucial item is missing from the location or an item reached the calibration date. Each of the alarms can be acknowledged by the user and the acknowledgement will be captured in the report.

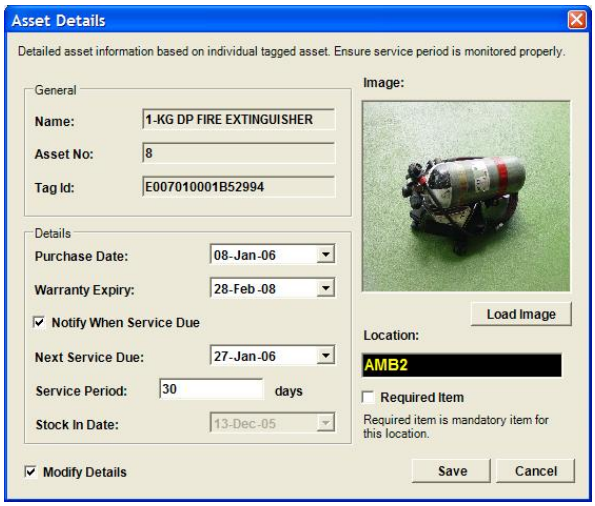

Figure 3: Details of individual items

Benefits

The benefits of using RFID and InvenCheck3000 are to reduce the amount of time required to do daily inspection where manual inspection is very tedious and requires a huge amount of time spent on data entry. Multiple RFID tags can be scanned at any one time by using RFID scanner equipped with InvenCheck3000. It then detects items as well as inform the user on missing items which is not captured by the RFID scanner. RFID tags provide unique identity to the equipment together with auto-identifications capabilities. Scanning is done wirelessly and it is contact-less. There is not line of sight required to read RFID tags and reading of tags is very fast. It takes up to 80% less time to do RFID inspection compared to manual inspection.

Summary

In short, InvenCheck3000 has simplified mundane and tedious tasks of daily inspection into a simple and more efficient where the inspector can concentrate on the inspection duty rather than being distracted by the burden of paperwork. InvenCheck3000 proves to be important for critical operations that require daily operations. Coupled with RFID technology, InvenCheck3000 provide easy data analysis and tracking of individual equipment.