# **INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT**



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**NEED/IMPORTANCE OF THE STUDY** 

STATEMENT OF THE PROBLEM

OBJECTIVES

HYPOTHESES

RESEARCH METHODOLOGY

RESULTS & DISCUSSION

FINDINGS

**RECOMMENDATIONS/SUGGESTIONS** 

CONCLUSIONS

SCOPE FOR FURTHER RESEARCH

ACKNOWLEDGMENTS

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## **MONITORING SYSTEM FOR TERRORISTS AND DANGEROUS PRISONERS**

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## ABSTRACT

To day security, safety and monitoring of terrorist and prisoners in jails and in the way of court is very big problem for police and administration across the world. Using Radio Frequency Identification (RFID) technology minimises this problem. RFID is a technology that enables the electronic and wireless labeling and identification of object, human as well as animals. RFID, which means it doesn't provide much value on its own, but it enables organizations to develop applications that create value. The first disturbing fact is that RFID is not a new technology. It was first used over sixty years ago by Britain to identify aircraft in World War II and was part of the refinement of radar. It was during the 1960s that RFID was first considered as a solution for the commercial world. The first commercial applications involving RFID followed during the 70s and 80s. These commercial applications were concerned with identifying some asset inside a single location. They were based on proprietary infrastructures. The Internet is another enabling technology, and just as the Internet enables companies to communicate, collaborate, educate, sell, entertain and distribute products, RFID enables organizations to do develop secure tracing , watching and monitoring prisoners in jails and many different things This paper focus on the ways RFID is being used by organizations today to create value and at some of the ways it might be applied in the future.

### **KEYWORDS**

Monitoring, Safety, Searching, Security, Tracing.

### INTRODUCTION

FID is evolving as a major technology enabler for identifying and tracking goods and assets around the world. It can help hospitals locate expensive equipment more quickly to improve patient care, pharmaceutical companies to reduce counterfeiting, and logistics providers to improve the management of moveable assets. It also promises to enable new efficiencies in the supply chain by tracking goods from the point of manufacture through to the retail point of sale (POS). RFID is the reading of physical tags on single products, cases, pallets, or re-usable containers that emit radio signals to be picked up by reader devices. These devices and software must be supported by a sophisticated software architecture that enables the collection and distribution of location-based information in near real time. The complete RFID picture combines the technology of the tags and readers with access to global standardized databases, ensuring real time access to up-to-date information about relevant products at any point in the supply chain

## **ELEMENTS OF THE SYSTEM**

#### INFORMATION TECHNOLOGY

The information technology is revolutionizing the way, in which we live and work. It is changing all aspects of our life and lifestyle. The digital revolution has given mankind the ability to treat information with mathematical precisions, to transmit it at very high accuracy and to manipulate it at will. These capabilities are bringing into being a whole world within and around the physical worlds. The amount of calculation of computerized information and its length is no limit now. Computer and fast communication are becoming integral parts of our lives. So computer system with communication technology is the main element of this proposed system.

**RFID Tags** can be either passive, active or battery assisted passive. An active tag has an on-board battery that periodically transmits its ID signal. A battery assisted passive (BAP) has a small battery on board that is activated when in the presence of a RFID reader. A passive tag is cheaper and smaller because it has no battery. Instead, the tag uses the radio energy transmitted by the reader as its energy source. The interrogator must be close for RF field to be strong enough to transfer sufficient power to the tag. Since tags have individual serial numbers, the RFID system design can discriminate several tags that might be within the range of the RFID reader and read them simultaneously. Tags may either be read-only, having a factory-assigned serial number that is used as a key into a database, or may be read/write, where the system user can write object-specific data into the tag. Field programmable tags may be write-once, read-multiple; the user may write "blank" tags with an electronic product code. Logistics and transportation are major areas of implementation for RFID technology. Yard management, shipping and freight and distribution centers use RFID tracking technology. In the railroad industry, RFID tags mounted on locomotives and rolling stock identify the owner, identification number and type of equipment and its characteristics. This can be used with a database to identify the lading, origin, destination, etc. of the commodities being carried.In commercial aviation, RFID technology is being incorporated to support maintenance on commercial aircraft. RFID tags are used to identify baggage and cargo at several airports and airlines. Some countries are using RFID technology for vehicle registration and enforcement. RFID can help detect and retrieve stolen cars.

#### **ANTENNA**

### **RFID READER ANTENNA**

The RFID reader antenna transmits a wave that has both electrical and magnetic properties and is known as an electromagnetic wave.

## There are 3 different types of RFID antennas:

Linear Polarization (dipole antennas) - the electromagnetic wave propagates entirely in one plane (Vertical or Horizontal) in the direction of the signal propagation. This is the best wave propagation when the tag orientation is known and fixed. The **RFID** antenna and RFID tag should be matched in polarization to obtain the best read rates.

**Circular Polarization** the electromagnetic wave propagates in two planes creating a circular effect (like a corkscrew) making one complete revolution in a single wavelength timeframe. Since the **RFID antenna** continuously emits a wavelength the rotational field will eventually cover any tag that is in its path. This is best to use when tag orientation is unknown, but **you lose at least 3dB when compared to a linear polarized antenna**. Circular polarization can be right or left handed hence the **RHCP** and **LHCP** options for circular polarized antenna.

Monostatic Circular or Bistatic Circular (2 Right Hand, 2 Left Hand or Right Hand + Left Hand)

- Monostatic is the most common RFID antenna and uses a single common port to transmit and receive signals
- Bistatic uses 2 RFID antennas in the same physical housing and uses one port to transmit and the other port to receive

### FREQUENCY BANDS

Frequency	Range	Application
100-500 KHZ	Short range, law reading speed	Animal, Human identification
10-15 MHZ	Medium range, average reading speed	Access control, Smart cards
850-950 MHZ	Long range, very high reading speed	Rail, Road, Car Monitoring, Toll Collection

## VOLUME NO. 2 (2012), ISSUE NO. 12 (DECEMBER)

Some standards that have been made regarding RFID technology include:

• ISO/IEC 18092 Information technology—Telecommunications and information exchange between systems—Near Field Communication—Interface and Protocol (NFCIP-1)

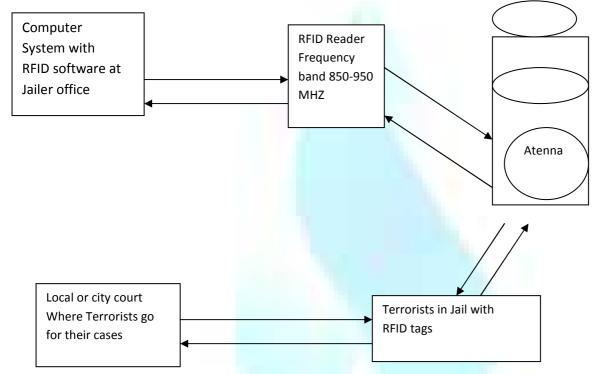
- ISO 18185: This is the industry standard for electronic seals or "e-seals" for tracking cargo containers using the 433 MHz and 2.4 GHz frequencies.
- ISO/IEC 21481 Information technology—Telecommunications and information exchange between systems—Near Field Communication Interface and Protocol -2 (NFCIP-2)

• ASTM D7434, Standard Test Method for Determining the Performance of Passive Radio Frequency Identification (RFID) Transponders on Palletized or Unitized Loads

• ASTM D7435, Standard Test Method for Determining the Performance of Passive Radio Frequency Identification (RFID) Transponders on Loaded Containers

ASTM D7580 Standard Test Method for Rotary Stretch Wrapper Method for Determining the Readability of Passive RFID Transponders on Homogenous Palletized or Unitized Loads

## NETWORK DIAGRAM OF THE PRISONERS WITH RFID MONITORING AND TRACING SYSTEM



As a unique identifier for Terrorists being attached to, RFID (SP-K300RW) tags can communicate with reader at 2.45GHz microwave frequency band, there are 4 types of different memory to choose.

SP-K301 96 Bytes RW Tag SP-K302 1K Bytes RW Tag SP-K303 4K Bytes RW Tag SP-K304 16K Bytes RW Tag

### PERFORMANCE OF RFID

Long range automatic identification, reader can write data into tags and update data, Conveniently, anti collision capacity, simultaneously identification up to 200 high speed, Multi channel identification capacity. Ultra low RF transmission power consumption, , healthier and safer Unique power saving mode long work life from 6 to 8 years

Time division multi address technology on HDLC and synchronized, communication, tolerance of interfering sources at the scene, Solid state encapsulation tolerance of high strength dropping and vibration, preventive of disassembling

## **ENVIRONMENT CHARACTERISTICS**

This tag can work from -40 to +80 degree ,it has Anti electromagnetism about

10V/m 0.1~1000MHz AM electromagnetic waves, its life of work around 7 to 8 years

its Frequency is 2.4 - 2.4835 GHz, Receiving sensibility is -80dBm--90Bm, Wakeup time is about Less than 3uS, Communication data rate is 1000kbit/s tag type is read/write, its size is 86mm\*54mm\*5mm, its weight is 30g

## AS A RESULT OF THE POTENTIAL BENEFITS OF THIS SYSTEM

While the technology has received more than its fair share of media coverage recently, many are still unfamiliar with RFID and the benefits it can offer. In the face of this need for clear, comprehensive information about RFID and its benefits, this paper defines the opportunities offered by the technology for all organizations involved in the movement, of mankind either sales boy or terrorist or prisoners. It is equally relevant for organizations wishing to track or locate existing goods, assets, or equipment.

## CONCLUSION

If Central Government and State Government installed this system in central jails such as Jodhpur central jail, Thira central jail, Mumbai central jail, central jail in Assam or north-east region, Kashmir with north region than security forces can easily monitor the terrorist and dangerous prisoners in jail and in the way of court. In future using 3G and 4G communication technology with integration of RFID technology we may make the system more effective and realizable.

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