Women Security System

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Abstract: **This article surveys about the security system for women which allows immediate response in case of any harassment and mainly focuses on two different parts, one is surveying the recently developed mobile applications for women safety and protection and secondly, the proposed work .The users can press a button that is located on watch with RFID technology that is, RFID tag is embedded in the watch or locket that contains information about unique ID and name. The RFID reader is embedded in mobile phone that receives radio waves and once the RFID tag is activated and emits radio waves, the RFID reader takes the information and triggers the mobile phone where the processor will perform the task and sends the messages to 4 or 5 predefined contacts in which one is for police women cell where they can get the information about location of the victim through GPS and message alert"HELP".**

Index Terms: RFID Tag, RFID reader, mobile phone, GPS

I. INTRODUCTION

Radio frequency identification as the name implies ,use of radio frequencies to transfer data in a wireless non contact style to identify and track the tags that are attached to object. The tags contain electronically stored information. Tags can be powered in many ways. Some tags are powered by magnetic fields (electromagnetic induction).Others use a battery or else have no battery but collect energy from the readers and.Battery powered tags may operate at hundreds of meters. The tags can be embedded in tracked objects and it does not need to be in line of sight as of barcode, this makes one of the differences in tags and barcode.A radio frequency identification system uses tags or labels attached to the objects to be identified. Two way radio transmitters and receivers called interrogators or readers send a signal to the tag and read its response.RFID tags can either be Passive, Active or Battery assisted passive. An Active tag has an on-board battery and periodically transmits its ID signal.A Battery assisted passive(BAP) has a small battery on board and is activated when in the presence of an RFID reader.A Passive tag is cheaper and smaller because it has no battery and can be activated by RFID reader radio waves.[1]

A) RFID TAGS:

RFID tags contain atleast two parts: an IC for storing and processing information, modulating and demodulating a RF signal, collecting DC power from the incident reader signal and other specialized functions and an antenna for receiving and transmitting the signal. The tag information is stored in non-volatile memory. An RFID reader transmits an encoded radio signal to interrogate the tag. The RFID tag receives the Message and then responds with its identification and other information. [1]

B) RFID READER:

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RFID systems can be classified by the type of tag and reader:

1) A Passive reader active tag (PRAT): PRAT system has a passive reader which only receives radio signals from active tags (battery operated, transmit only) .The reception range of a PRAT system reader can be adjusted 1-2000 feet (0.30-609.60m).

2) An Active reader passive tag (ARPT): ARPT system has an active reader which transmits interrogator signals and also receives authentication replies from passive tags.

*3)An Active reader active tag(ARAT):*ARAT system uses active tags awoken with an interrogator signal from the active reader.A variation of this system could use a battery assisted passive(BAP) tag which acts like a passive tag but has a small battery to power the tags return reporting signal. Mobile readers may be handheld or mounted on carts or vehicles. The RFID tag can be affixed to an object and used to track and manage inventory, assets, peoples etc for example it can be affixed to cars, computer equipments, books, mobile phones etc [1]

C) RFID tag/Interrogator Coupling: Coupling between tag and interrogator can be either:

1) Magnetic: In the case of near field communication (few cm up to 1m).Interrogator uses LF or HF.

2)Electromagnetic: In the case of far field communication(up to 6m in line of sight communication and European regulations).Interrogator uses UHF or SHF.

II.RECENTLY DEVELOPED MOBILE APPLICATIONS FOR WOMEN SAFETY IN INDIA [2]

Survey shows 10 best mobile applications which ensure safety in case of emergencies listed below:

*A) FIGHTBACK:*Fight back ,the women safety application, sends SOS alerts from your phone.Fight back uses GPS,SMS,location maps,GPRS,email and your Face book account to inform your loved ones in case you are in danger.

*B)GUARDLY:*This application places phone calls to the predefined contacts along with the name,realtime location, type of emergencies and enables to identify different locations.

C) ON WATCH: This application is developed especially for college students. It allows the user to easily alert friends and emergency responders and police when needed with the GPS location.

D) FAMILY LOCATOR: This application notifies about the near and dear ones about the trouble. It provides the useful information about the criminals in the neighbourhood, tracking the most visited locations and so on.It also keeps connected with the family members with the support of GPS.It informs others about the exact location through messages,calls,emails with the press of a button.

E) SENTINEL: It is a smartphone application used to serve as a virtual security guard for women. The users can press a button once they feel they are being stalked or harassed. It sends out instant alerts to let friends, family or police know about the trouble and save them.

F) STREET SAFE: This application has a feature called "WALK WITH ME" which gets the details of the situation and stays on line until they ensure the users gets back home safe. In case the call is cut, the safety advisor connects the user to the

local police for further help and guidance. In case of emergency situations, a feature called "SILENT ALARM"enables to get local help from the real time location using the GPS and the physical description of the user.

G) *CIRCLE OF 6:* This application intends to add 6 members to your circle which is developed for college students which lets 6 friends know when you are facing a troublesome situations. With two taps, the app sends one out of three predetermined alert messages to six contacts of your choice including a call for help connecting home that automatically includes the real-time location. The app also consists of pre-programmed hotline numbers and a local number that can be customized for police or 911.

H) *b SAFE:* The bSafe app works as a guardian that sends an emergency message to the chosen contacts with a push of a single button and its slogan is "Never walk alone". This application offers two levels of safety; a Risk mode with real time GPS which tracks the position and a Timer mode with an automatic alarm activation. It's a user-friendly app which just needs a single tap to inform the chosen contacts.

I) *CAB 4 ME:* Cab4me, as the name suggests, is a mobile cab finder app that helps get a cab anywhere at any time. It works based on the location. The phone's GPS shows the location on the map and one can choose the pickup destination or a nearby taxi stand based on the available stand. If in case the database has no cab company for the specific area, a local web search is performed to get a result.

J) *HOLLABACK:* "Hollaback! You have the power to end street harassment", is the tag line of this particular app. Here the users can take a photo of the harasser and upload it as 'caught in the act' and submit their story on ihollaback.org. It signals the perpetrator that his photo is shared on the website as well as warns others from doing this act. The app encourages users to submit stories along with photographs of street harassment at every level from catcalls to strangers groping hands or even individuals exposing themselves in public roads. [2]

III.PROPOSED WORK

The present and proposed work explains about an innovative idea for women security which has become mandatory now –a-days. In this system, women wearing a wrist watch on her hand or wearing a locket in her neck is embedded with some RFID Intelligence system with emergency button on it. Such RFID system here proposed is Passive Reader Active Tag(PRAT) where the passive reader is embed in mobile phone and Active Tag is embed in wrist watch or locket. The active tag is run by a switch where by pressing the switch (emergency button) the active tag will be activated and the passive reader can only receives the radio signals where the active tag is a battery operated one. The active tag which is embed in wrist watch or locket is switch dependent that is based on switching on/off it is going to activate and sends the information(Unique ID,Name…).Whenever the user feels stalked and harassed, she can press the emergency button that is kept on wrist watch or locket there by switching on and activating the active tag to be operated with the battery and sends the information, once the RFID reader receives this encoded information ,it connects to the processor and sends the message"HELP" to 5 predefined contacts in which one is connected to the nearby police cell and other 4 contacts will be connected to the dear ones.

A) *Advantage of Proposed system:* Sometimes the women can keep her mobile phone in bag and the harasser can throw her bag away from

her in which case she can't be able to operate the mobile phone .In this application she need to initiate the system from wearable wrist watch or locket even if her phone is away from her she can operate through wrist watch or locket and can activate the RFID tag and can send information to the RFID reader. The reader then sends the encoded data to the processor for further processing and there by message alerts can be send to predefined contacts.

B) *RFID System with Switch On/Off:*A U.K. firm has developed an ON/OFF switch for RFID cards that could protect cardholders from being hacked.This idea can be proposed for our system also.[3]

C) *Algorithm for Women Security System:*
1) If the user feels any harassment or stalked.
2) Then Switch On by pressing emergency button
   a) Activates RFID tag
   b) RFID reader receives the encoded data
   c) Processor performs the task.
   d) Message Alert"HELP" to predefined contacts.
3) Else
   a) Switch Off mode.
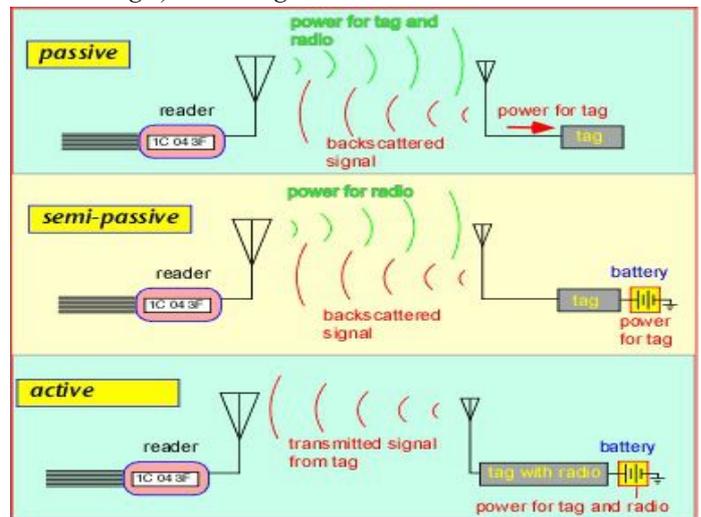
Fig 1) RFID Tags and Readers
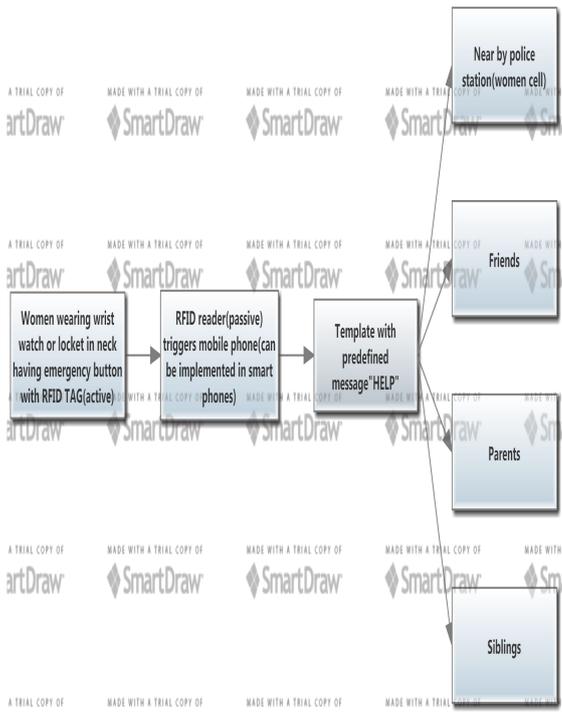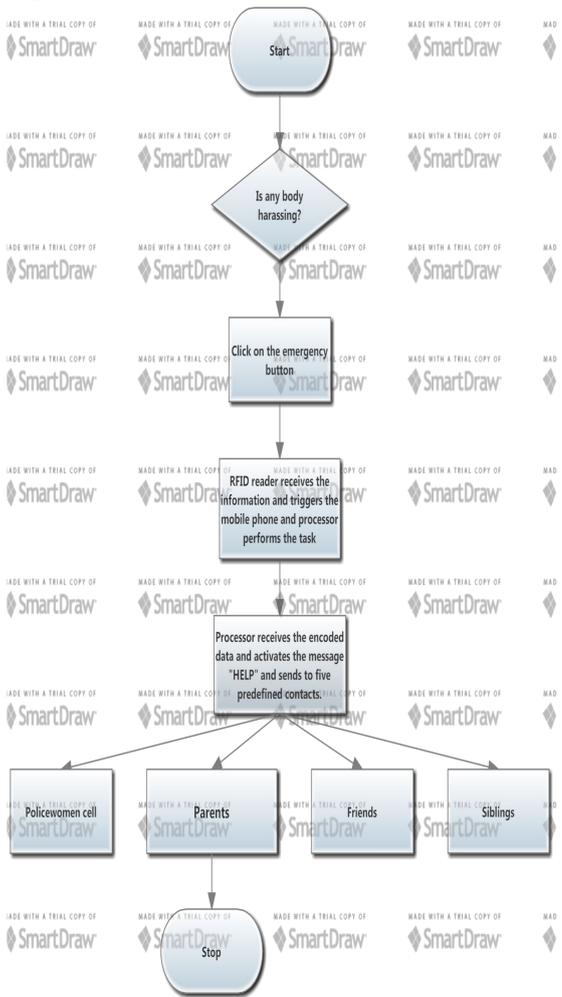

Fig 2) Women Security System Block diagram

Fig 3) Flow Chart for Women Security System

IV.CONCLUSION

This paper surveys about the existing applications for women security and comes out with an innovative idea for security and protection for women and more research is possible with introducing IoT technology where people and objects form a network.

V.REFERENCES

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