

# IMPLEMENTATION OF INTELLIGENT SAFETY SYSTEM BY USING IOT

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## Abstract:

As the threats against women and children increasing rapidly we proposed a system that works on security solution using smart devices based on IOT. In this project the system intense to a wireless technique in the form of Embedded devices namely Arduino for women. That will serve the purpose of alerts and way of communicating with secure channels. The system has been developing on web based data driven application has provided the useful information. The GPS module track the Longitude and Latitude to trace an exact location for a user and sends the pre-stored emergency message including location to the registered contact numbers. Arduino monitors the heartbeat-rate, temperature through sensors to check for uneasy situation. IN such situations it will activate the GPS module to track the location send to the control room of the receiver through GSM module to take necessary actions.

Keywords: Security, GPS, GSM, Google map, web based application.

## I. INTRODUCTION:

India which sees itself as a promising super power and an economic hub can achieve it goals if and only if a large number of women participate in the development process. This paper presents an analysis review on the principal need of intelligence security system with technology requirement and challenges to build the system. Since the predictions of such incident is not possible hence to minimize the possibility of physical violation (robbery, sexual assault etc.). by keeping all the help tools ready to safely escape from violation situation. This reduces risk and brings assistance when needed. The social networking is the part of our life and also a source for women harassment by uploading offensive photograph taken by hidden cameras, even though this cases might happen with innocence males, in some such cases this guys end their life by committing suicide. The de facto spokesperson of united nation bans Ki-moon, stated that “There is one universal truth applicable to all countries, cultures and communities: violence

against women is never acceptable, never excusable, and never tolerable” [11]. The report of WHO states that. “A violence act against female gender disturbed the public health life of society and also it violates the rights of women.” [12].

## II. EXISTING METHOD:

Systems designed as a mobile app for the android mobile:

The paper [1] proposes a voice keyword recognizing app to recognize the user and activate the app functionality even when the mobile keypad locked. The GPS module tracks the longitude and latitude to trace an exact location of a user and sends the pre-stored emergency message including location to the registered contact numbers. The Audio Recording module starts the recording of the conversation for five minutes and stored as evidences. The message goes in queue if network problem and send when network gets available. A notification is generated for successful deliver message. Also user can select contact through voice

based contact list and make a call. Note: The spoken keyword converted into a text to compare with the registered keyword.

The paper [2] proposes an emergency response situation recognizing app called as IPROB to provide women safety even in the situation like terrorist attacks or natural disaster, by just shaking the mobile above the predefined threshold value automatically activate the system. It starts capturing the surrounding voice to test and confirm the unsafe IPROB situation where it raised the notification and user fail to respond in predefined time then the message alert sends to the register contacts. If the mobile profile at the receiver is in silent mode then convert it into the General profile to give the voice notification as “YOUR CHILD IS IN TROUBLE PLZ HELP...PLZ HELP ...” continuously like a ring tone, until they stop it. If a register contact confirms a PROB then appropriate emergency services like ambulance, fire brigade are alerted. If a register contact responds with an audible notification, then it automatically connects and enables the speakerphone at the victim side. An integrated tri-axial accelerometer used to evaluate the unique movements that a phone experiences as threshold.

The paper [3] proposes a SCIWARS app (Spy Camera Identification and Women Attack Rescue System) which consist of two modules. A first module act as an intelligent alerts system which detects the infrared rays coming from every Night-vision hidden cameras placed in changing rooms hotels room etc. and also informed the user about unsafe place through message. Now it's the user responsibility whether to register a complaint or not by forwarding the notification with the location to legal authorities such as Police. The second module will get activated by pressing any key continuously which will provide the help to the victim from physic attack in unsafe situation. It sends the emergency message containing location to register contacts. It also records the voice and captures the images of the surrounding for 45 seconds. This information also stored in secret location of mobile for future evidences. This app also able to converts the receiver mobile International Journal of Computer Applications (0975 – 8887) Volume 130

– No.11, November2015 34 profile from silent to general mode, and also supports the auto-call receiving system at victim side.

The paper [4] proposes an android app to provide security at two different situations as follows. The First module provide security to Women at Emergency Situations propose a Save Our Souls (SOS) app to provides the security on a single click of SOS button for the women travelling at night or alone. No need to unlock the screen, instead by just pressing the power button it directly triggers the application to run at the background, to send the emergency message including the location in the form of latitude and longitude to the registered contacts. The second module proposes an android based home security system that provides security of house belongings and Senior Citizen in the user absence. Since the security of senior citizen is always a concern with increasing number of robbery incidents. This app informs the user about an attempt of intrusion activity at home through a message and a feedback SMS triggers an alarm in the house. The minimum requirement is the android mobile, a hardware circuit embedded with a switch and GSM modem that are connected to the door. When an intruder tries to open the door, the switch triggers an interrupt for the microcontroller to activate the GSM modem to send warning SMS to the store registered number in the modem. At the receivers end the application pop up the menu frequently for user attention. If the user fails to acknowledge in the defined time interval, then the automatic positive acknowledgement message get send to the remote GSM modem which in turn interrupt the microcontroller for an alarm.

The paper [5] proposes an app, in which a single click of SOS sends a message containing the location and/ or audio- video call to the guardian number. At receiver touch the location URL in the message to view it in the Google Map. It also provides different help tools like First-Aid help, Fake Call Help and video call. The First-Aid help tool provides the help on various health issue problems occurred at an accidental or emergency situation during the night time. First aid help for various problems are as: unconscious and not breathing, choking, bleeding heavily, burns, heart

attack, diabetes etc. The Fake call help to escape from the meetings- parties at a time when women start feeling uncomfortable and think that, “if someone calls me then I can leave this place”. Fake call rings tone same as that of normal incoming call ring and once call accepted it stop ringing. It also supports Fake Hang Up option. The guardian contacts are by-default for this app, but it able to search the cops, firemen, hospitals contacts nearby to your location. It also sends the audio-video recording via Email-Gmail of emergency situation taken by the user where user unable to speak or tell the circumstances.

2. Systems designed as a device with the help of Microcontroller :-

The IEEE real project [6] propose an automated highly reliable women security device which consist of the advanced sensors embedded in a wearable dresses. It consist of advanced sensors, GSM and ATMEGA8 microcontroller with ARDUINO tool which keep user under observation at all the time. It monitors the heart beat-rate, temperature and vibration in body through sensors to check for uneasy situation. In such situation it will activate the GPS module to track the location and wireless camera to capture the images that get send to the control room of the receiver through GSM modules to take necessary actions. At the same time processor activate the mice unit with amplifier which strengthens the voice of the women to screams or shout above the threshold limit.

The Paper [7] proposed a portable device as a belt which is automatically activated base on the pressure difference crosses over the threshold in unsafe situation. A GPS module track the location and sends the emergency messages to three emergency contacts every two minutes with updated location through GSM. The system also activates the screaming alarm that uses a siren, to call out for help and also generates an electric shock to harm the attacker for self-defense which may help the victim to escape. The device mainly consists of micro controller on the ATmega328 board which programmed using the ARDUINO programming language.

The paper [8] proposes the women security device called as “Suraksha” which is an easy to

operate device. This device can be activated through- voice command, Press a switch key and shock (i.e. when the device is thrown with force, a force sensor used to activate the device). In emergency situation it will send the message including instant location to the police, via the transmitter module and registered numbers via a GSM module. Currently the work is under process to embed it in jewelries, mobile or other carrier like belt etc. It can play a major role in the propose projects where all the police stations are connected and share the criminal records, crime investigating cases etc.

The paper [9] proposes an extended vehicle tracking system to track the vehicle based on GPS with that it also provides the safety through an emergency button kept under the vehicle seat using GSM. As the increasing economic growth rate of a country, many companies are establishing their setup in the nearby region of the cities. Since, the security of women employees’ inside the private transportation is the companies’ responsibility. In the unsafe situation an employee need to press the emergency button to activate the device Teltonika-FM1100. It in turn enables simultaneously the android device used to capture the images inside the vehicle and the GPS system which track the vehicle position in the form of latitude and longitude. An alert message including the location is send card to the company special team and nearby police station through GSM SIM. After that it is the responsibility of police squad and company team to handle the situation. The security in the system can be further enhances by using Geo-Fencing software that uses the GPS and Google Earth to define the Area-Zone for a vehicle that act as a virtual barrier. An admin uses the tools provided by the software to set geographical boundaries which help to detect wherever a vehicle enters or leaves the customized geo-fenced area and restrict the drivers to travel from the sensitive zones. The admin can see the reports of vehicle position, speed, ignition status and travelling report and also instruct the driver on the speaker phone that is placed inside the vehicle.

### III PROPOSED SYSTEM:

Base on the critical analysis and the requirement of safety functionality the modules are selected as shown in figure . The working of selected modules is as follows:

**Database Module:-**The user needs to register the emergency contact numbers with the system which are stored in Register Contact Database. A voice keyword needs to be register with the system. It also store the notification generated by various modules as a report of evidences. It used SQLite database.

**Auto receiving call module:** - After receiving the notification if register contact make the return back call then the call is get accepted without manual interaction at the user side and makes the speaker phone ON.

**Global Positioning System (GPS) module:** - It is a navigation and precise positioning tool, tracks the location in the form of longitude and latitude based. The GPS Coder Module used this information to search an exact address of that location as the street name, nearby junction etc. In case where GPS is disabled then the system will only send the longitude and latitude. Internet is mandatory.

**GSM System Module:** - Global System for Mobile communication (GSM) SIM card is inserted inside the mobile device to send and receive the messages using GPRS. The GSM SIM card number is registered with the system. With increasing usage of GSM, network services are expanded beyond speech communication to incorporate many other custom applications, machine automation and machine to machine communication.

**Spy camera detection module:** - It detects the infrared rays coming from every Night-vision hidden cameras placed in changing rooms- hotels room etc. in such cases it traces the location using GPS module and send the notification to the user about unsafe place. It depends on the user to register the complaint base on notification.

**Intrusion Detection Module:-**The minimum requirement is the android mobile device, a hardware circuit with a switch and a GSM modem embedded should be installed and connected to the door of the house. When the intruder tries to open

the door, the switch triggers an interrupt for the microcontroller to trigger the GSM modem to transmit a warning SMS to the registered number store in the modem. At the receivers end the application pop up the menu frequently. It wait the user (for pre determine time) to acknowledge, if user fail to respond then the system consider the positive feedback and sends to the remote GSM modem to interrupt microcontroller to activate the alarm at home side. This siren makes the attention of other people towards the intrusion activity.

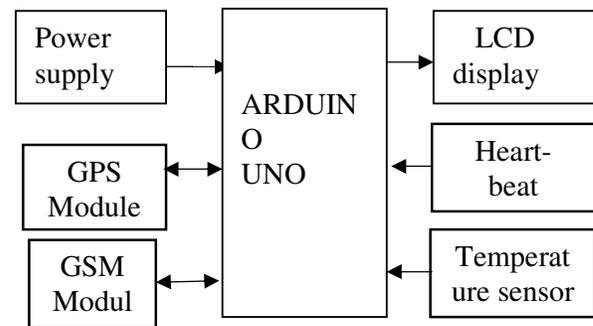


Fig: Block diagram of proposed system

#### IV.CONCLUSION:

It can be concluded that the system helps to supports the gender equality by providing safe environment to women in the society, and allows them to work till late nights. Anyone before doing any crime against the women will be deterred and it help reducing the crime rate against the Women. The propose system provides the area zone modules to provides the child security and surveillance such as the child abuse and child missing crime rate in the society is high and protection measure is needed to provide them a safety. The limitation of the devices can be overcome by storing the data onto the cloud. There is a need to make such systems standard and get approval from government, so that courts accept the evidences. Women's security is a critical and social issue in today's world. The crime (molestations, robbery, sexual assault, rape, domestic violence) against the women can be now brought to an end with the help of real system implementation of propose model.

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