# Review Paper Of iSecure

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**Abstract-** The main aim of this research paper is to gives a review of the whole product with purpose, scope, definitions, references and diagram. The point of this article is to accumulate and break down and give a top to bottom knowledge of the entire iSecure Mobile Application by characterizing the issue explanation in detail. On the other hand, that additionally focuses concerning the services required with the aid of users or their wishes even as defining high-level manufacture features. The detailed requirements concerning the iSecure Mobile Application are supplied in this paper. This article should give acceptable a point by point review about iSecure project, its parameters and also objectives. This article describes the research work of the project and the final outcomes of the project. It defines how iSecure audience pleasure to sees the product yet its functionality

**Keywords—** Smart Watch, Smart Phone, GPS, GSM, Camera, Bluetooth.

## I. Introduction

The basic purpose of the iSecure is to resolve individual and collective security issues in Pakistan. iSecure is a personal safety android application and gadget (smart watch) that will be design to secure a person and people around 24/7. It will be pack with the features that provide safety for individuals and an easy way of reporting real time emergencies, making it the ultimate safety tool. It will not only secure a iSecure users but also the people around him as it provides a feature of reporting all type of emergencies to quick response units. It can be used by all age group users as it will contain separate features and functionalities for all age group users.

The basic motive of an iSecure is to develop an android application that will provide assurance to guardians that their dependents are safe, secure and connected where ever they go even if no one is with them.

There are certain benefits of iSecure application which includes an easy way for guardians to monitor overall activities of their dependents, real time tracking of dependents, history tracking to check dependents location in past, easy way of reporting emergencies with evidence and accessing transport drivers profile.

## II. Scope of the Product

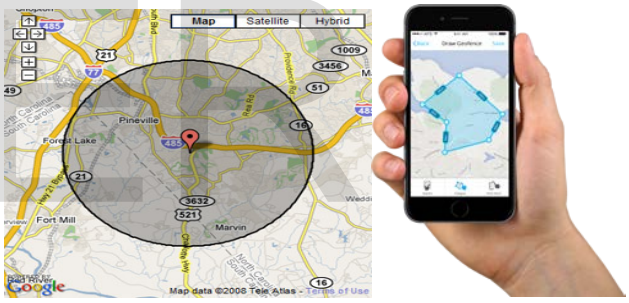
The main aim of the iSecure application is to assure the guardian that their dependents are safe and secure. The basic scope of iSecure is to control the issues regarding safety and security in Pakistan.

## III. Features

iSecure consists of all the feature which is required for the emergency situation. The overall functional requirements of iSecure are Geo-fencing, real time tracking, safe travel, emergency mode, public transport safety assurance and iSecure community.

### A. *Geo Fencing*

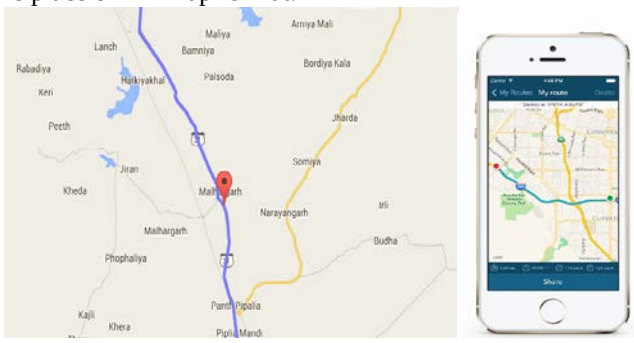
Geo-fencing functionality is to specify safe zones or otherwise danger zones for a user, so if the user crosses the zone an alarm beep will be generated as well as a message will be sent to the guardian informing that the user is in restricted area or out of safe zone.




### B. *Real Time Tracking*

Guardians might realize the constant area about their dependents. They only must click around “Location” button in accordance with come real age vicinity over their dependents using iSecure application.

Clicking about place will display the specific tackle and coordinates for the convenience. Map display regarding real time place on 2D map format.



### C. *Safe Travel*

Safe travel function in which the user specifies the destination before leaving which will notify the guardian that the user is travelling and also notifies when he/she reaches safely the desired destination.

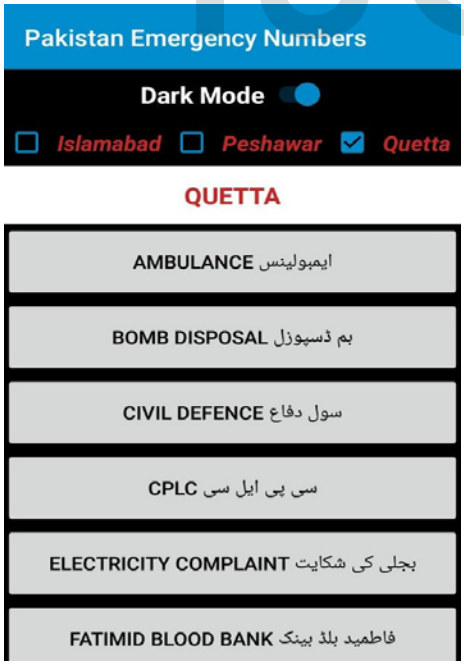
When the user sets its destination and started travelling the system calculates the estimated time to reach the destination and if the user doesn't reach there on time the system will automatically sends a suspicious behavior notification to the guardian.

### D. *Emergency Mode*

If a user is in any danger he/she can turn on the emergency mode just by single tap which will turn on the video and voice recording on device and send an emergency message to all of his/her guardians along with his/her location.


### E. *Public Transport Safety Assurance*

It also provides functionality to ensure respective public transport is safe to travel which requires the user to enter the vehicle




registration no. of that transport and a user can report to it if it is not safe to travel.

### F. *Reporting Emergencies To Quick Response Units*

iSecure provides functionality to report real time emergencies with evidence (photos and videos and voice clips) and location to the respective emergency unit (CPLC, Edhi Center Rangers Unit and so on) which will be sent to the nearest office from the incident location.

### G. *Accessing Tracking History*

The guardian can also view the tracking history of the iSecure user. This will show turn by turn accurate tracking history of the iSecure user and the locations he/she visited

## IV. User Classes And Characteristics

The users of the product might be kids, youngsters, adult and older adults. Users most frequently use the product for tracking and security function. The users are not likely to have a highly educated. Technical expertise skill is not required to use the product as the user interfaces is available in easy and understandable way.

### A. *Kids*

Real time tracking and geo-fencing features are the most important feature for the kids. The other features for kids will be that they can make/receive call and send/receive voice messages to and from the guardian. If kid needs help he taps to an emergency button so the system's emergency mode will be turn on which will automatically start recording video, audio and sends an emergency message to all guardians of kid with his/her last location.

### B. *Youngster And Adults*

iSecure provides multiple features for youngsters and adults which includes real time tracking, safe travelling, public transport assurance through vehicle registration number, reporting evidence (photos, videos or voice clips) based emergencies to quick response units and an iSecure community to provide communication among iSecure users. The other features for Youngsters will be making and receiving calls and receive/send text messages as well as voice messages.

### C. *Older Adults*

Geo-Fencing and location reminder for are the most important features for older adults. The other features for older adults will be that they can make/receive calls and send voice

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messages to their guardian. If they need help they can tap an emergency button so the system will automatically start recording video, audio and sends and emergency message to all guardians with last location.

## V. Tools And Technology

The software being developed will be running under android platform embedded operating system. The application will be developed using Java as a core language on Android Studio Integrated Development Environment and will use Cloud Computing for data storage and a web service portal for emergency reporting. The hardware that will be required is smart watch which contains GPS, GSM, and camera, android supported SDK and can work independent of smart phone. The following platforms are used:

- Android Studio
- Smart Watch
- Android Phone
- Apache Server
- Google Maps API

### *A. Android Studio*

Android Studio is a popular software development environment (also known as integrated development environment) that enables programmers and engenders from all around the world direct access to the tools for coding, debugging, performance optimizing, version compatibility checking, hardware compatibility checking (various android devices and screen size, including tablets), and many other tools that can help developers to better automate process of coding and enable quicker iteration and discovery.

### *B. Smart Watch*

A smart watch is a computerized wristwatch with functionality that goes beyond timekeeping. While early models can perform basic tasks, such as calculations, translations, and game-playing, 2010s smart watches are effectively wearable computers. Many run mobile apps, using a mobile operating system.

### *C. Android Phone*

In a nutshell, an Android phone is a powerful, high-tech smartphone that runs on the Android operating system (OS) developed by Google and is used by a variety of mobile phone manufacturers.

### *D. Apache Server*

Apache is the most widely used web server software. Developed and maintained by Apache Software Foundation, Apache is an open source software available for free. It runs on 67% of all webservers in the world. It is fast, reliable, and secure. It can be highly customized to meet the needs of many different environments by using extensions and modules.

### *E. Google Map API*

A single map load is charged when any of the following occur: A web page or application displays a map using the Google Maps JavaScript API. A web page or application displays a Google Street View Image API panorama using the Google Maps JavaScript API

## VI. Cloud Computing

Computing Architecture changed from Mainframe thin-client to client-server in the past. Because of the internet, now we are heading to internet-based thin-client. It is called Cloud Computing [1]. Cloud is basically a remote server to store any type of dada. Instead of running programs and data on client-side computers (desktop or laptop), everything is hosted in the cloud (an assemblage of computers and servers via the internet). Cloud Computing lets us access all of our applications, data, and documents from anywhere in the world and it also makes us easier to collaborate with team members who are in different locations.

iSecure uses cloud computing to store data over the internet so it is always available to the user without any delay and data retrieval will be fast and easy on the cloud.

### *A. Benefits of Cloud Computing*

**Flexibility**

Users can scale services to fit their needs, customize applications, and access cloud services from anywhere with an Internet connection.

Cloud infrastructure scales on demand to support fluctuating workloads. iSecure chooses public storage area for the storage. These include software as a service (SaaS), platform as a service (PaaS), and infrastructure as a service (IaaS). [2]

**Efficiency**

iSecure users can get applications to market quickly without worrying about underlying infrastructure costs or maintenance because of the cloud computing and services [3]. Developing in the cloud enables users to get their application to market quickly.

**Strategic Value**

Cloud computing provides the organization competitive advantage in the market because this is the most innovative technology of this era. The data store on the cloud is regularly updated and easily accessible by the guardian.

## VII. Services

Services is basically used when there is no direct communication between android application and database. Since android application uses Java language and database uses MySQL so these two languages are not able to communicate directly so we use web services to provide communication between them. Services is simple PHP class file which communicate to database and android as well [4].

iSecure services simply receive or send data to the android smartphone or android smart watch and to the database on the cloud.

iSecure customized services are used to get the current location of the user and send the location to the guardian as well store the location of the user on the remote server so the information is easily accessible by anywhere.

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## VIII. IMPLEMENTATION

iSecure application is implemented after the compilation of cloud computing and services. The guardian side application is implement on the android smart phone whereas the user side application is implements on the iSecure smart watch. A website of iSecure is also available online so the user can also login through a website.

Real time tracking is one of main feature of the iSecure which is implemented as the application use Google API to locate the current location of the user. And then this location will be saved in database with the help of the services to keep the record of the user's location.

Safe Zone is also implemented with the help of Google API and generate alert if the user go out of the safe zone. In this area the application retrieve the longitude and latitude of the user's current location and if the location longitude and latitude is out of the safe zone's longitude and latitude then the alert will be generate.

Vehicle safety assurance is implemented with the help of an iSecure users. iSecure application provides an option to report the vehicle no and also upload the picture of the person which was included in any crime case. When the three iSecure user report same vehicle number then the iSecure application mark that vehicle black listed and after that any iSecure user use that vehicle so the application inform the user as well as guardian that this vehicle is black listed and the person is suspicious so please be safe will travelling.

The next feature which is implemented is iSecure community. iSecure community is also implemented with the help of the Google API. Google API is used to generate a nearby community of the people wearing the iSecure smart watch and in case of any emergency one user inform other nearby user that he needs help. iSecure community is also helpful in reporting emergencies to the CPLC unit because if more than one person report the same emergency so it will increase severity level and the emergency unit response more quickly.

After the implementation of all the components of the application it will further go to the testing process for convince of the user and in the end the application will be available on Google play store for the purpose of easy download.

## IX. TESTING OF THE IMPLEMENTATION

After the deployment of the application and services iSecure test all over the application using the different types of testing strategies.

The object of this test is to warrant that iSecure application functions as it intends to as per its requirements and specifications.

The test will execute and confirm the experiments, distinguish and settle the bugs organize high and low seriousness absconds for future retest and settling.

The ultimate result of the test will be the generation prepared programming with no imperfections and furthermore an arrangement of stable experiments that can be reused for additionally testing in later venture stages.

## X. RELATED WORK

iSecure is basically inspire by U Watch and bSafe application. In iSecure application combined the feature of U Watch and bSafe application along with some innovative features.

### *A. U Watch*

U Watch was launched by Ufone and the U Watch is only the kids U Watch was introduce for the parent's peace of mind. Ufone's U Watch is mainly intended at keeping the kids connected with parents when they are away, and that too without the need of smartphones. U Watch is a wearable watch that has rich feature set to keep parents connected with their kids by knowing their real-time location and two way voice calling functionality i.e. the parent can dial into the watch and also the child can dial from the watch to the parent's mobile number. With he U Watch app, the parent is always in control. From live monitoring to setting up safe zones, the app provides several ways to customize the U Watch experience for your family.

***Features:***

- Real time tracking
- Voice calling (Parent's to kids
- Fast Dial Emergency SOS Calling (Kids to Parents)
- Safe Zones / Geo Fence
- Safe list calling
- Tracking History Playback
- Remote Turn off/Turn On Function
- Battery time of up to 2 days
- Water Resistant
- Time, Date and Alarm [5].

### *B. bSafe*

bSafe you is a personal safety app in which users create a "social safety network" of individuals who are notified in case of an emergency or in situations where the user feels unsafe. Various features allow users to invite friends to follow their location via GPS when on the move, quickly send their location information to friends, set a timer that will automatically send an alarm to friends if they don't return in time to turn it off, or initiate a fake call into their phone if they want an interruption. In an emergency, the user can send an alarm to friends with their location information. The user can also decide whether they want the alarm to sound a loud noise on their phone or be silent so they can discreetly trigger it. Make bSafe part of your life and never walk alone again.

***Features:***

bSafe's Terms of Service specifically prohibit users from stalking, threatening, or violating the privacy of others; locating another user without their consent (unless a guardian of a minor) disseminate any defamatory or obscene content; or collect information about others without their consent. Apps such as these are meant to increase safety and we appreciate clear policies that prohibit their misuse.

There is no limit on or minimum number of contacts the user can

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invite to the network.

In several places, the user is given control over how the app works. They are able to decide if they want to share certain communications with some or all of their network, if they want the alarm to sound on their phone, how long the delay will be from when they push the alarm button to when the alarm is triggered, and if the app will initiate a video recording when the alarm is pushed. They can also choose to use a pin code on the app to increase security. The pin would be required in order to disarm a sent alarm [6].

## XI. Impact on Society

iSecure has a positive impact on society. It basically provide a safe atmosphere to the user of the product and also give parents assurance that their loved one are safe. This product has s great impact on society as the parents are satisfy so they encourage their dependents to go out for learning and working. This improve the educational level in Pakistan. As the basic motive behind this product is the safety so when the users feel safe they are stress free and more devoted to their work in this way the product have a great impact on society.

## XII. Result and Conclusion

Now a day security issues increases worldwide and people want to be safe everywhere even if no one is around them. iSecure is basically come up with the idea of the personal safety application. Users wear iSecure smart watch and if they notice any emergency situation around them or even the user itself needs help then he simply press the emergency button to inform their guardian that he is not safe or he need some help. The goal of the iSecure product is to guard user safety and security. The one of best part of the iSecure is that it is available to all age groups accounting to their needs.

## Appendix

### *A. Glossary*

Geo-Fence:
A virtual geographic boundary, defined by GPS or RFID technology that enables software to trigger a response when a mobile device enters or leaves a particular area.
Live Streaming:
Transmit or receive live video and audio coverage of (an event) over the Internet.
Global Positioning System (GPS):
GPS, is a radio navigation system that allows land, sea, and airborne users to determine their exact location, velocity, and time 24 hours a day, in all weather conditions, anywhere in the world.
Global System for Mobile communication (GSM):
GSM is a digital mobile telephony system that is widely used in Europe and other parts of the world. GSM uses a variation of time division multiple access (TDMA) and is the most widely used of the three digital wireless telephony technologies.
Tracking:
The maintenance of a constant difference in frequency between two or more connected circuits or components.
Community:
A group of people living in the same place or having a particular characteristic in common
Smart Phone:
A mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, Internet access, and an operating system capable of running downloaded apps.
Android studio:
Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains, IntelliJ IDEA software and designed specifically for Android development.

Web Interface:
The interaction between a user and software running on a Web server. The user interface is the Web browser and the Web page it downloaded and rendered. See Web application and Web server.
Functional Testing:
Functional Testing is a testing technique that is used to test the features/ functionality of the system or Software, should cover all the scenarios including failure paths and boundary cases.
Unit Testing:
Unit testing is a level of software testing where individual units/ components of a software are tested. The purpose is to validate that each unit of the software performs as designed. A unit is the smallest testable part of software. It usually has one or a few inputs and usually a single output.
Integration testing:
Integration testing (sometimes called integration and testing, abbreviated I&T) is the phase in software testing in which individual software modules are combined and tested as a group. It occurs after unit testing and before validation testing.
Assumption:
A thing that is accepted as true or as certain to happen, without proof
Dependencies:
A country or province controlled by another.
GUI:
A Graphical User Interface (GUI for short) allows users to interact with the computer hardware in a user friendly way. Over the years a range of GUI's have been developed for different operating systems such as OS/2, Macintosh, Windows amiga, Linux, Symbian OS, and more
Venture:
A risky or daring journey or undertaking.
User:
A desktop computer or workstation that is capable of obtaining information and applications from a server.
Safety:
The condition of being protected from or unlikely to cause danger, risk, or injury.
Security:
Security is the degree of resistance to, or protection from, harm.
Communication:
The imparting or exchanging of information by speaking, writing, or using some other medium.
Dementia:

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A chronic or persistent disorder of the mental processes caused by brain disease or injury and marked by memory disorders, personality changes, and impaired reasoning.

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