**Project Proposal**

**IOT Based Health and location Tracking System**

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*University Institute of Information Technology, PMAS Arid Agriculture University, Rawalpindi*

**Project Title:**

**IOT Based Health and location Tracking System**

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|  |  |  |  |  |  |
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**TBW Course Teacher Comments:**

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**Teacher Signature with Date**

**Supervisor Comments (If different than above):**

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**Supervisor Signature with Date**

**Evaluator-1 Comments:**

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**Evaluator-1 Signature with Date**

**Evaluator-2 Comments:**

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**Evaluator-2 Signature with Date**

**1. Project Summary:**

This system allows to army head office to track location and get health status of solider in the war. We use IOT device to track and get health status of soldier. Our main concern is to provide safety to army solider in the war if anything happen with him . Army soldier wear a IOT based gadget. Existing system are working like that but it is not provide complete web panel for based station and also it did not provide security between IOT gadget and based station. So our main focus is give complete end to end security and web interface for based station.

**2. Introduction:**

Now days, fighting is a significant factor in any country's security. One of the significant and Unreliable jobs is played by the military officers. There are numerous concerns with respect to the security of fighters. So for their security purpose, many instruments are mounted on them to view their health status as well as their real time location. Bio-sensor systems include various types of small physiological sensors, transmission modules and processing capabilities, and can thus facilitate low-cost wearable quiet solutions for health monitoring.[1] In this project we provide ability to track the location and monitor health of the soldiers in real time who become lost and get injured in the battlefield. It helps to minimize the army control unit's time, search and rescue operation efforts. Using GPS module and wireless body area sensor networks (WBASNs), such as temperature sensor, heart beat sensor, et) this system allows army control unit to monitor soldiers ' location and health status.[1] In military operations, one of the fundamental challenges is that the soldiers are unable to communicate with the control unit. In addition, proper military navigation plays an important role in careful planning and coordination. Therefore, the proposed work focuses on monitoring the position of the soldier, which is useful for the control room station to know the exact location of the soldier and, as a result, to direct them. The control unit uses GPS to find the soldier. When he lost in the war, the base station must guide the soldier on the right path. Smart Bio medical sensors including heart sensor, temperature & humidity sensor etc. are connected to the soldiers ' jacket. These are being implanted for complete mobility with the soldier. This system uses a wireless connection to provide access to the base station network. The data collected on the web panel of the base station can be used to predict further. This can allow the control station to find out about the mission field situation.[1]

**3. Project Aim:**

Our work focuses on tracking the location of soldier with secure communication which is useful for control room station to know the exact location of soldier and accordingly they will guide them. Control unit gets location of soldier using GPS. It is necessary for the base station to guide the soldier on correct path if he lost in the battlefield.

**4. Project Objectives:**

Our main objective is to provide safe and secure communication channel between based station and soldier in the war.

Some Others object as follows:

* Track Location of soldier.
* Get Update of soldier health status.
* Secure Communication Between Solider and Based station.
* Complete Web panel for managing and observing whole war.

**5. Project Scope:**

1. Admin can add new soldier.
2. Admin can delete soldier.
3. User can see all soldier.
4. User can See Soldier profile and health status.
5. User can track soldier
6. User can add operation
7. Admin can assign operation to soldier
8. User can complete operation
9. User can detect gadget is on off and identify health status and location
10. User can get Alert from Soldier if he get injured
11. User can show location of soldier in graph
12. User can show health status in graph
13. User can show total operation
14. User can login
15. Admin can add new observer.
16. Admin can see all observer.
17. Admin can see details about observer
18. Admin can delete observer
19. Two user level one is admin other is observer

**6. Problem Statement:**

IOT nodes have communication security problems. In the war soldiers are lost their location and control unit didn’t know the location and health status of soldier. Control unit did not know the current situation of war. In this situation communication between two nodes are very insecure.

**7. Proposed Solution:**

Our system will solve this problem and provide reliable communication between based station and soldier. Through this system control unit track location , get health status and also make war strategy for the future.

**Our System Consist of :**

**1-** Web panel for control unit

2- Android app for control unit

3- IOT Based Gadget for soldier

**8- Software/Tools Requirement:**

1. Android Studio for Android App
2. Sublime for Web panel
3. Rational Rose for Design
4. Arduino Studio IOT based Gadget

**9- Language**

1. Kotlin
2. Node Js and Angular
3. Python

**10- Project Timeline**

1. 31 October Proposal writing
2. 30 November Requirements Analysis
3. 31 December Design

**11- Hardware:**

1. Temperature Sensor
2. Heart Beat Sensor
3. Humidity Sensor
4. Arduino board
5. Battery
6. 4X4 Matrix Keypad
7. GSM Module
8. GPS Module
9. Display Screen
10. Android Mobile

**12- Reference:**

**1-**<https://www.sciencedirect.com/science/article/pii/S1877050918310202>