



- אל Harm

Electrical and Electronic Engineering B.Sc. Final Project

Software Engineering B.Sc. Final Project

FRS- Functional Requirement Specification

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1. Overview

The system is an emergency alarm system for women who are subject to domestic violence

The system consists of :

- panic button (PB)
- mobile app
- cloud server app

2. Glossary

- Panic Button (PB) – The wearable device which triggers the Alarm.
- Alarm – the ID which received from the PB.
- GateWay - Smart device (e.g SmartPhone) which receiving the Alarm by BT/Wifi/Cellular technologies and sends via app an Alert to the cloud server app or to the authorities.
- Alert - A msg which includes all the details of the woman: ID, Full Name and Location.
- False Alarm - when the PB is pressed by accident,

2 situations are possible:

- a) The woman is aware - she can use the app to cancel the Alarm.
- b) The woman is not aware - we can use the feature of recording in order to understand if she is in danger or not.

3. Problem Description and Motivation

Much too often women today (35% of women worldwide) are subject to abuse or violence by spouses or others.

Also reported that out of the 87,000 women that were murdered in 2017, more than half (58 percent) were killed by partners or family members

They are helpless in a potentially life-threatening situation without help in sight and when time is critical. In such an emergency situation the ability to alert the police in time, or

make the attacker aware that help may be on the way, could be life-saving.

4. Project Goals

The system should be:

- 1) Simple to use.
- 2) Resistant for damage - when the PB falls down.
- 3) Low cost - sub 30-40\$.
- 4) Inconspicuous or hidden to plain sight (e.g. a locket, an earring piece, or a bracelet part)

5. The Approach

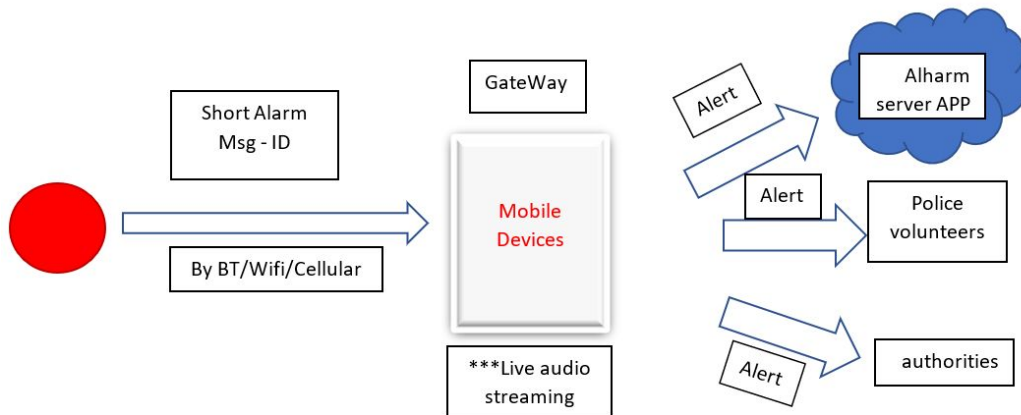
The P.B will send an Alarm to the GateWay(mobile devices) that will have the AI-harm app installed. Once the Alarm is received, the woman's mobile device starts recording and broadcasting live audio to the GateWay users (neighbors, friends).

The GateWay sends an Alert via app to the cloud server app or to the authorities (Police, Magen David Adom etc.)

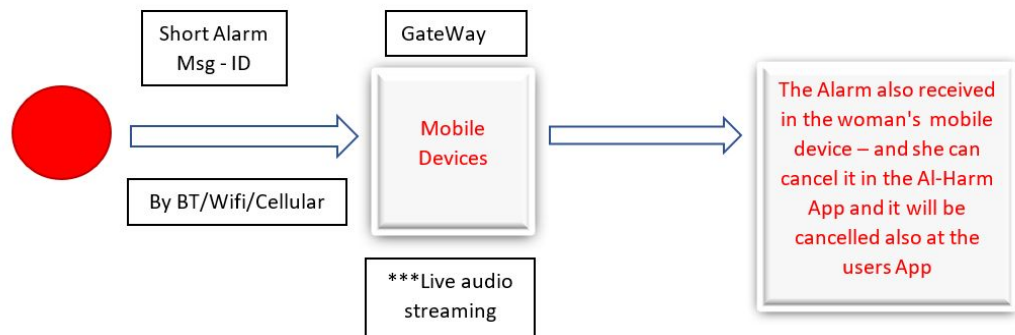
6. Scenarios

All the scenarios happens after pressing the PB:

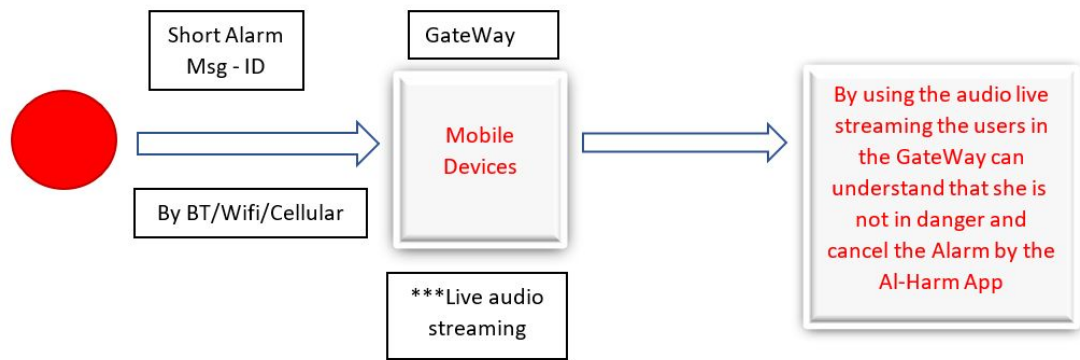
1. The classic scenario: long press on the button:



2. False Alarm - When the trigger is pressed accidentally - The woman is aware - she can use the app to cancel the Alarm.



3. The woman is not aware - we can use the feature of recording in order to understand if she is in danger or not.



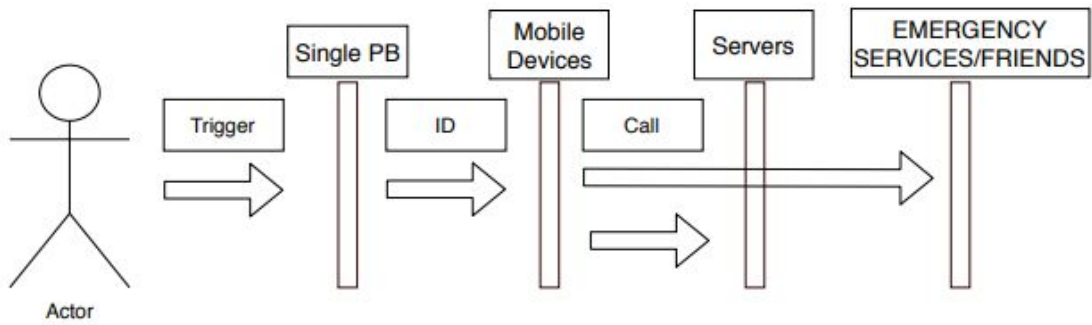
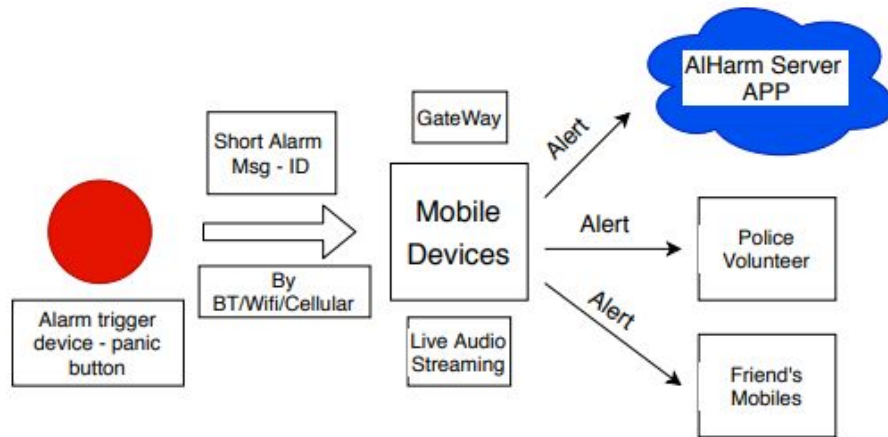
7. Functional Requirements

- Low latency - The system's components should be fast to respond and to receive and transfer the call.
- The system will identify the location where the Alarm originated
- A few receivers will be able to get the Alarm signal and the Furthermore, send an Alert to the authorities (Police, Magen David Adom etc.)

8. Non- Functional Requirements

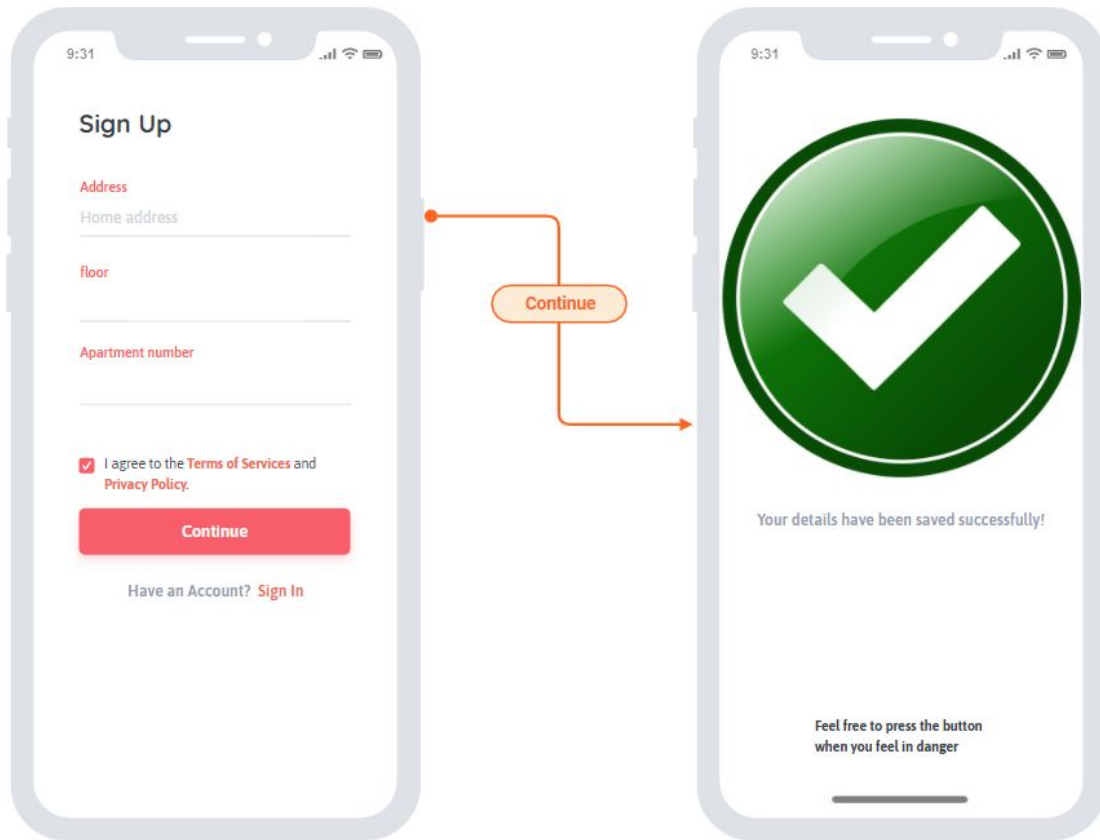
- The PB should be easy to carry.
- Low energy components – which lasts for a long time without charging.
- The PB has to be discreet.
- The app should be easy to register and use.

9. System Flows

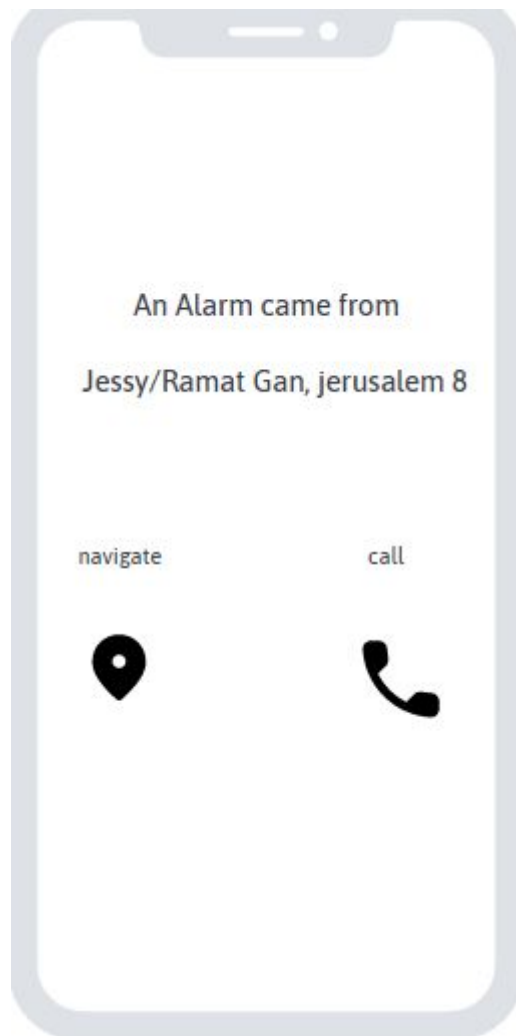


10. System Screen Specifications

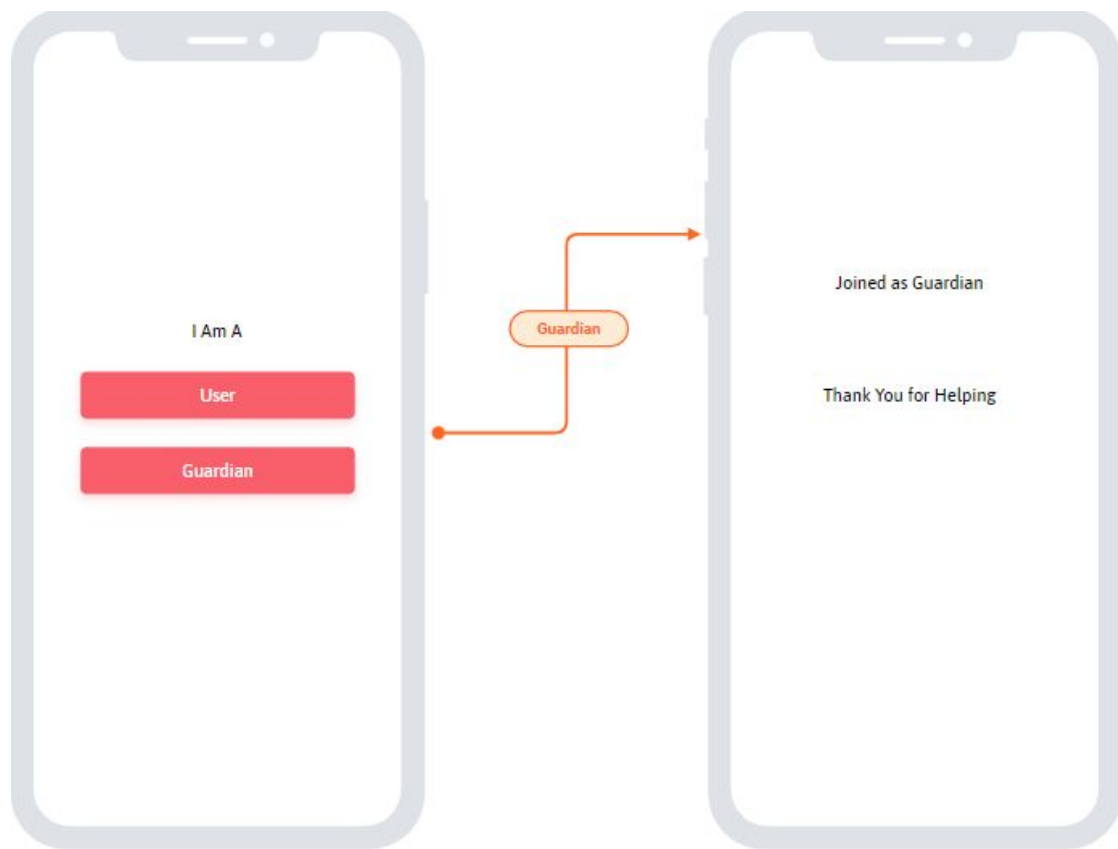
initial registration



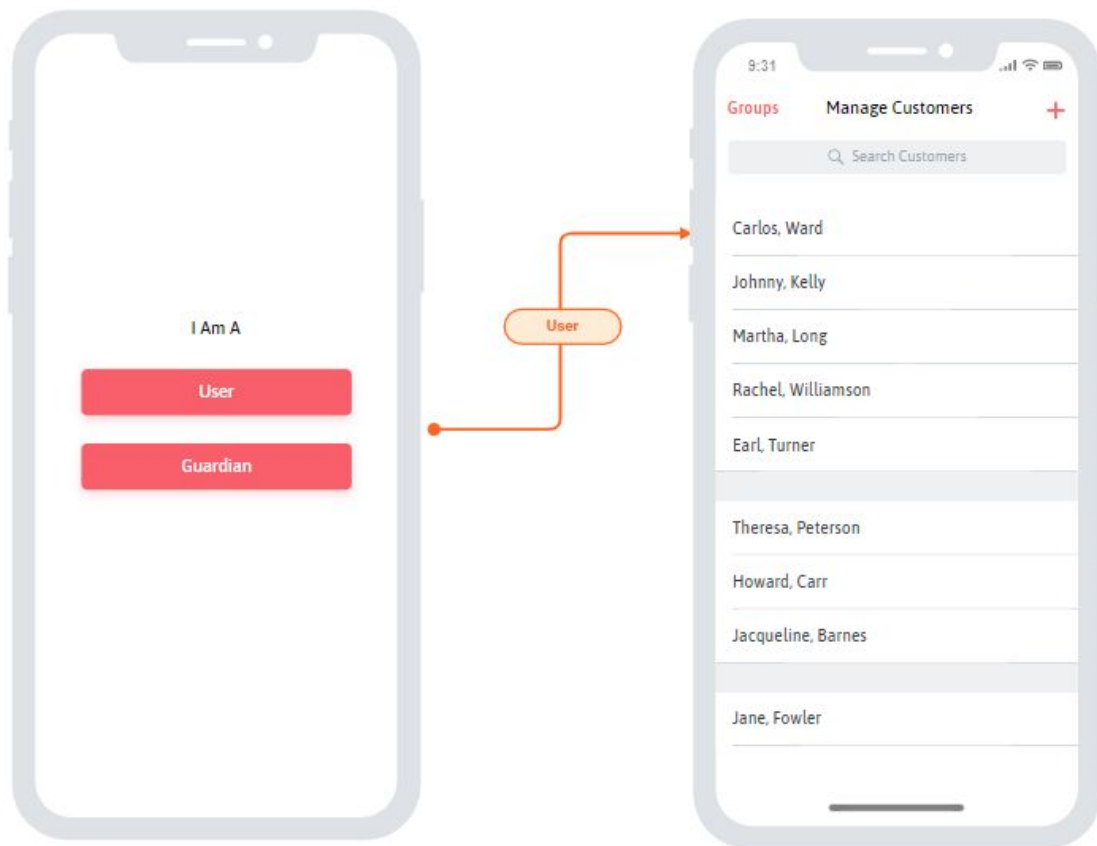
Alarm Received from a Friend/Anonymous Call Screen



[Sign In as Guardian](#)



Sign In as User



11.Non Goals

We will not address cases in which the user uses the system maliciously

12. Open Issues

- We will have to differentiate between false (an accidental press) and true alert. SIMPLY BY HAVING UNDO OR ALARM-CANCELLATION ((צפירת הרגעה) MESSAGE , TBD
- Interfacing with live audio streaming.