ABSTRACT:

eMars - Emergency Medical Alert and Response System

The elderly people's health begins to deteriorate and dependency begins to escalate with age-ing and are often hesitant to share any health related problems to their children due to the fear that they might over-burden them. On the other hand, their children who are in the working population, may/may not be living with their parents and want to make sure that their parents are in the best care possible, and want a complete tension & paranoia free experience when it comes to the cases of emergencies.

The tension is aggregated on both sides (parents/children) when the following problems occur:

- Elderly tend to **fall down** often due to aging and health issues
- Have Fear of Intruders and **Theft/Robbery**
- At times, elderly do not pick up the call
- Risk of **Sudden change** in health conditions (Vital signs)
- Face lack of Immediate Medical Assistance
- Not able to call during Emergency (Battery dead, misplaced phone, phone glitches, etc.,)

eMars - Emergency Medical Alert and Response System is an ecosystem that provides a comprehensive solution to all the above mentioned problems.
The ecosystem is made up of:

- Wearable Device & an application,
- Response System (24/7 monitoring Center)
- Ambulance/Medical Assistance Dispatchers
- On-Call Doctors/Nurses

The eMa - **Emergency Medical Alert** is a wearable device which does:

- Automatic Detection - Fall detection, Heart Rate Variations
- Manual Detection - SOS Button
- Two Way Communication with an embedded GSM (Mic and Speaker)
- GPS Tracking
- UI that gives real-time details about the user

The wearable device does real-time tracking of Falls (physical injuries), bradycardia` (Slow HR) and tachycardia (High HR) and SOS button (in case of an intruder). When a detection is triggered, a call is placed to the Response System.

The RS - **Response System** is a 24/7 monitoring center where there are trained associates who assess the threat level of user during an emergency and then make the call to the Ambulance dispatchers. The assessment of threat-level is done based on the sensor responses from the wearable device as well as the details given by the user during an emergency.
Add-on features may include courtesy calls given to the user twice a week or so, in order to assess their health related needs/issues. If any needs/issues persists a doctor/nurse is sent to their location.