

SOLUTION ARCHITECTURE

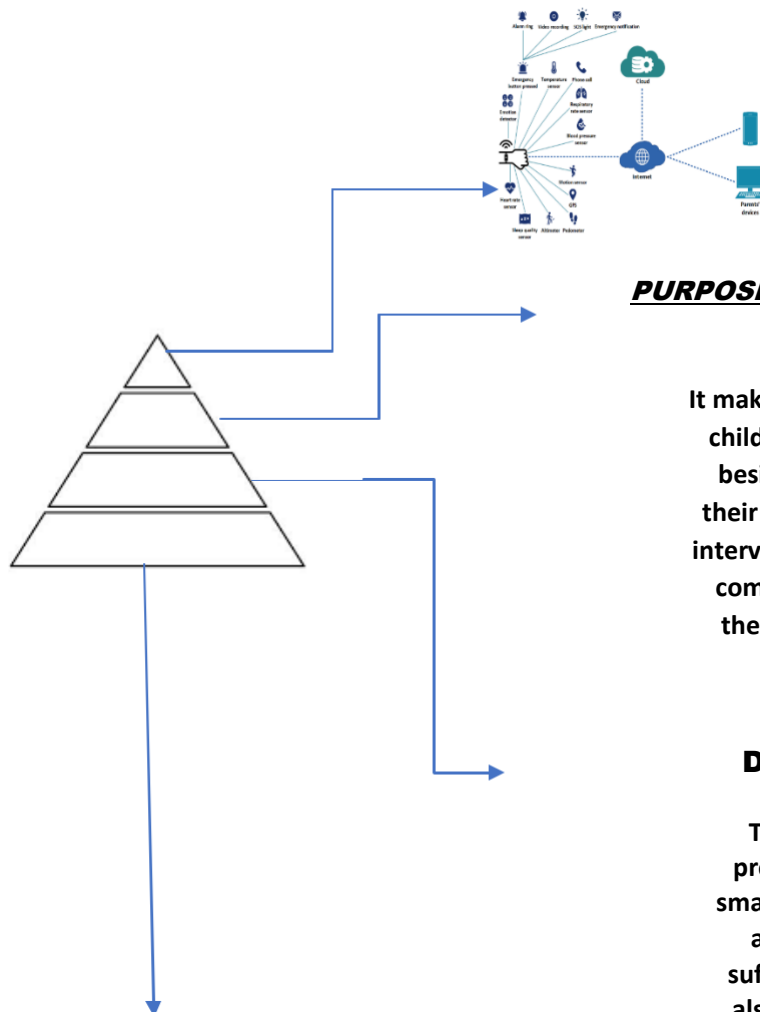
Date	14 OCTOBER 2022
Team ID	PNT2022TMID33322
Project Name	Project - IoT based safety gadget for Child Safety Monitoring and Notification

SOLUTION ARCHITECTURE :

In our system, we automatically monitor the child in real time using Internet of Things, with the help of GPS, GSM, and Raspberry Pi. This system requires network connectivity, satellite communication, and high-speed data connection when we use a web camera and GPS to monitor. A portable device which will have a pressure switch. As soon as an assailant is about to attack the person or when the person senses any insecurity from a stranger, he/she can then put pressure on the device by squeezing or compressing it. Instantly the pressure sensor senses this pressure and a conventional SMS, with the victim's location will be sent to their parents/guardian cell phone numbers stored in the device while purchasing it, followed by a call. If the call is unanswered for a prolonged time, a call will be redirected to the police and the same message will be sent. Additionally, if the person crosses some area which is usually not accessed by the person then a message with the real-time location is sent to the parent/guardian's phone via conventional SMS.

In the existing system, we use a voice recognition module in which the alert commands from the child are stored and kept for further reference. If the same child delivers the same command, it will compare with the alert command which was previously stored and sets an emergency level according to the alert command. The GSM has a SIM which is used to send an alert message or an alert call to the trusted peoples. GPS is used to track the live location and it is used when needed. The server will search the respective device ID from the database and search for respective contacts according to that device ID and help in alerting the registered guardians. The Temperature sensor is used to sense the surrounding temperature of the device. If the temperature level exceeds the room temperature then the alert message will be sent using GSM to the specified users. The Pulse sensor is used to detect any abnormal feelings experienced by the child like fear, anxiety, nervousness, drowsiness and several other illnesses which manipulate the normal heart rate. These values are used to alert the specified guardians through SMS using GSM. When the user receives these alert messages from that device, they can turn on the web camera placed in that device, with which they can visually monitor the status of that child through the live video stream.

DESIGN:



PURPOSE OF CHILD MONITORING DEVICES

It makes parents to easily monitor their children in real time just like staying beside them as well as focusing on their own career without any manual intervention. Basically, children cannot complain about abusements which they face in their daily life to their parents.

DEVICE LIFETIME:

The device uses solar charging unit is proposed to overcome the limitation of small battery life so that the device will be always charged up. When there isn't sufficient solar energy battery back up is also available. This can be used for over long period without any limitations. The device can be used all the time unless any physical damage takes place.

FUNCTION:

The device has IoT monitoring and a GSM module that allows the child to be monitored at all times. It also has numerous sensors that are connected to a CPU and are used to detect exact signals such as heart rate, temperature, and other dangers and alert the parents.