

**Ideation Phase**  
**Literature Survey**

Date	19 November 2022
Team ID	PNT2022TMID12772
Project Name	IOT Based Safety Gadget for Child Safety Monitoring & Notification
Maximum Marks	4 Marks

1. The parent module and child module make up the two modules that make up the planned system. When a violation of child safe is identified, a specific sensor in kid module will produce a signal. These sensors will send a signal to the controller, which will send it through the transmitter to the parent module, which will make the necessary determination and initiate the violation handling process. The parent can choose whether the system should operate indoors or outdoors, and depending on this choice, the parent module can determine the distance between each child and their parent at any given time. When determining distance indoors, variation in RF signal amplitude is used rather than the Global Positioning System (GPS). Additionally, the parent can set a safety distance for each child, and if that distance is crossed, the system will sound an alarm for both the parent and the child. The suggested hardware and software for this concept is straightforward and may be implemented on a low-cost, single-chip microcontroller.

2. The system is made with a LinkIt ONE board that has embedded C programming and is interfaced with temperature, heartbeat, touch, GPS, GSM, and digital camera modules. The work is innovative in that when a child is in need of rapid attention during an emergency, the system instantly notifies the parent or caregiver by sending an SMS. The child's touch, temperature, and heartbeat are employed as parameters for the parametric analysis, and the results are presented for the same. An SMS is sent to the parents' mobile phone and an MMS with a picture from the serial camera is also sent if the sensor detects any abnormal readings. Future work will involve implementing an IoT device that will provide a comprehensive answer to all child safety issues.

3. The major objective of this project is to develop a child-safe smart wearable device that makes use of cutting-edge technologies. This tactic is therefore seen as the children's wearable sending an SMS to their parents or guardians. Through the use of a GSM module, this initiative uses cutting-edge technology to protect the child, making sure that they do not feel alone as they cope with such societal difficulties. The wearable will have an Arduino Nano, GSM, GPS, temperature sensor, heartbeat sensor, and a panic button. The heartbeat sensor regularly notifies the parent of the child's heart rate after detecting it. The accelerometer detects a sudden fall by the youngster and notifies the parents. The parent feels secure as a result of this.

4. In an effort to overcome the shortcomings of existing systems, this study provides a tracking system that can identify numerous dangers when multiple children are present. The parent module and child module make up the two modules that make up the planned system. A special sensor in the child module will send out a signal if the child safe is violated. These sensors will send a signal to the controller, which will send it through the transmitter to the parent module, which will make the necessary determination and initiate the violation handling process. The parent can choose whether the system should operate indoors or outdoors, and depending on this choice, the parent module can determine the distance between each child and their parent at any given time. When determining distance

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5. For two common safety scenarios, namely going outdoors with their guardians and going outside without their guardians, respectively, the Mobile Children Security Monitoring (MCSM) system implements the software hand function and the danger zone function. The software hand function can use Bluetooth NFC to keep kids in view, and the safety zone function can use GPS, acceleration sensors, and mobile GIS to let parents know where their kids are at all times (Geographic Information System). Experiments demonstrate that the system possesses the qualities of high dependability, rapid responsiveness, and high accuracy, and that it is capable of meeting the demands necessary to protect the safety of children.