Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID26623
Project Name	Project – IOT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING AND NOTIFICATION
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	With the rapid development of urbanization and industrialization, more and more children are having safety challenges. In order to overcome the challenges, we design a child safety monitoring system where children can be warned about potential risks, and their guardians can be informed of location or activity abnormities. A child safety monitoring system allows the parent to locate and monitor their children. This system is applicable in crowded places, keeps them in safety zone.
2.	Idea / Solution description	The proposed solution is a IOT wearable device for children based on Arduino UNO and ATmega328P microcontroller that contains the real time accurate location of the child by GPS module and will also provide the surrounding temperature, humidity and also the heartbeat of a child by sensors. The secondary measure implemented was using a bright SOS Light and distress alarm buzzer present on the wearable device which when activated by the parents via SMS text should display the SOS signal brightly and sound an alarm which a bystander can easily spot as a sign of distress. The sensors are activated automatically when they are subjective to the miscellaneous activities. If any problem occurs it would alert parents through the cell phone so that they can take immediate action. The parent can get to the kid data intermittently by interfacing through this gadget. The data is stored into a cloud permanently to keep the track record of old data of the children for further reference. This device focus on the SMS text enabled communication.

3.	Novelty / Uniqueness	• The novelty of the work is that the system automatically alerts the parent/caretaker by sending SMS, when immediate attention is required for the child during emergency. • To get geo coordinates of child using GPS module • To get temperature, humidity details of area of child • It displays the SOS signal brightly and sound an alarm which a bystander can easily spot as a sign of distress and reach out the child.
4.	Social Impact / Customer Satisfaction	• Improved safety index of children. • Freedom for children with special needs. • Parents feel that this device can lead to a safer community. • Easy availability and affordability. • Tracking made easier. • Guarantee peace of mind to parents.
5.	Business Model (Revenue Model)	• Selling the product directly to parents along with monthly subscriptions for tracking and notification services. • Selling the product to child care centers. • This product will be useful for working parent's community by increasing safety of their child as well as their career. • The product can be a wearable watches or bands with attractive colours so that young group can wear it as a style statement.
6.	Scalability of the Solution	• The security and safety of the child is increased than earlier. • The privacy of end user is protected as it can support only mutual authentication. • Location determination protocol can support better scalability. • The communication and computational cost are low