

## Project Design Phase-II

### Solution Requirements (Functional & Non-functional)

Date	20 October 2022
Team ID	PNT2022TMID41842
Project Name	Project - IoT Based Safety Gadget for Child Safety Monitoring and Notification
Maximum Marks	4 Marks

#### **Functional Requirements:**

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	<ul style="list-style-type: none"><li>✓ Registration through Gmail</li><li>✓ Registration through phone number</li></ul>
FR-2	User Confirmation	<ul style="list-style-type: none"><li>✓ Confirmation via Email</li><li>✓ Confirmation via OTP</li></ul>
FR-3	App installation	<ul style="list-style-type: none"><li>✓ Installation through link</li><li>✓ Installation through play store</li></ul>
FR-4	Settings geofence	<ul style="list-style-type: none"><li>✓ Setting by user to find child location</li></ul>
FR-5	Detecting child location	<ul style="list-style-type: none"><li>✓ Detecting location via app</li><li>✓ Detecting location via SMS</li></ul>
FR-6	User Interface	<ul style="list-style-type: none"><li>✓ User Login Form.</li><li>✓ Admin Login Form.</li></ul>
FR-7	Database	<ul style="list-style-type: none"><li>✓ Stored in cloud for seamless connectivity.</li><li>✓ Parents and kids link with the distance and the location values obtained from the mobile devices are stored here.</li><li>✓ The values include parent id,kid id,distance,longitude,latitude etc.</li></ul>

FR No.	Functional Requirement	Sub Requirement
FR-8	Server	<ul style="list-style-type: none"> <li>✓ It connects the database and the front end application.</li> <li>✓ The backend server has been implemented to run as a service and is deployed in an IBM cloud instance.</li> <li>✓ The backend server has been implemented to run as a service and is deployed in an IBM cloud instance.</li> </ul>
FR-9	GPS tracking	<ul style="list-style-type: none"> <li>✓ The system is implemented with a GPS module, which acquires the location information of the user and stores it to the database.</li> </ul>
FR-10	API	<ul style="list-style-type: none"> <li>✓ The value collected is sent to the database using an API.</li> </ul>
FR-11	React JS	<ul style="list-style-type: none"> <li>✓ We are using react js as front end for our project.</li> <li>✓ Node JS for the back end we are using node js.</li> </ul>
FR-12	GPS modules	<ul style="list-style-type: none"> <li>✓ It receives data directly from satellites.</li> </ul>
FR-13	Battery Life	<ul style="list-style-type: none"> <li>✓ If the child or parent forgets to charge the device for a whole day then also the device will work. That's why we aim to make this device last the whole day with one charge.</li> <li>✓ It should be long-lasting.</li> </ul>
FR-14	Location History	<ul style="list-style-type: none"> <li>✓ The location history will help to track the child's activity so that the aren't will be updated. Location history will be there for 30 days.</li> <li>✓ For example if the child gets missing with the help of location history the aren't can track down their child's activity and also can find their child.</li> </ul>

### **Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

FR No.	Non-functional Requirements	Description
NFR-1	Usability	<ul style="list-style-type: none"><li>✓ Device have GSM can help to inform the parents or relatives about the current situations of the child by deliver the message immediately to save the child.</li></ul>
NFR-2	Security	<ul style="list-style-type: none"><li>✓ Make children parents more assure about their kid's security, we have a feature in our device called Geo-Fence.</li><li>✓ Whenever your child crosses that specific area, you will get an instant notification on your phone.</li></ul>
NFR-3	Reliability	<ul style="list-style-type: none"><li>✓ Portable</li><li>✓ Easy to use</li><li>✓ Flexibility</li></ul>
NFR-4	Performance	<ul style="list-style-type: none"><li>✓ Create a Child tracker which helps the parents with continuously monitoring the child's location.</li><li>✓ The notification will be sent according to the child's location to their parents or caretakers.</li><li>✓ The entire location data will be stored in the database.</li></ul>
NFR-5	Availability	<ul style="list-style-type: none"><li>✓ Track your child even in a crowd</li><li>✓ Get travel details of kids at anytime</li><li>✓ Know the current location</li></ul>
NFR-6	Scalability	<ul style="list-style-type: none"><li>✓ Gadget ensures the safety and tracking of the children.</li><li>✓ Parents need not worry about their children.</li></ul>
NFR-7	Valuability	<ul style="list-style-type: none"><li>✓ The system should be able to deliver promptly to the financing authority.</li><li>✓ In the case of non-profit organizations, the solution should be 'advancing the mission'.</li></ul>

FR No.	Non-functional Requirements	Description
NFR-9	Dynamicity	<ul style="list-style-type: none"> <li>✓ IoT devices may have the capability to adapt dynamically and change based on their conditions.</li> </ul>
NFR-10	Desirability	<ul style="list-style-type: none"> <li>✓ Navigation should be made easy.</li> <li>✓ The user should be able to search and find the information he needs without much hassle.</li> </ul>