

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

| | |
|---------------------|--|
| Project Name | IoT based safety gadget for child safety and notification system |
|---------------------|--|

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">● Registration through message● Registration through website● Registration through App● Registration through Call● Registration through Social Media |
| FR-2 | User Confirmation | <ul style="list-style-type: none">● Confirmation via Email● Confirmation via OTP● Confirmation via Call |
| FR-3 | App Installation | <ul style="list-style-type: none">● Installation through Link● Installation through Play Store/App Store |
| FR-4 | Detecting Child Location | <ul style="list-style-type: none">● Detecting location via app● Detecting location via SMS● Detecting location through Website |
| FR-5 | Database | <ul style="list-style-type: none">● Location history is stored in the cloud● Values include distance, latitude, longitude |
| FR-6 | User Interface | <ul style="list-style-type: none">● User login form● Admin login form |
| FR-7 | User Notification | <ul style="list-style-type: none">● Notification through Message● Notification through Gmail |

Non-functional Requirements:

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

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|---|
| NFR-1 | Usability | <ul style="list-style-type: none">● A midget setup via the application is made in the mobile that helps to send SMS to parents.● The gadget has a GSM that aids in informing the parents/guardian about the current location of their kids which in turn helps the parents/guardians take immediate action when any crisis occurs.● The gadget is compact and effortless to operate and its applications are foolproof. |
| NFR-2 | Security | <ul style="list-style-type: none">● The device is designed in such a way that it builds a safe environment for children to go outside.● It gives a sense of assurance to parents about their children's security as the gadget uses GPS and GSM to track their live location. |
| NFR-3 | Reliability | <ul style="list-style-type: none">● Inflated reliability towards the mechanism and curtail reliability towards parents/guardians.● It is transportable, Easy to access, and also tensile.● We can use the cloud to accumulate the surveillance data of the children.● The wifi modules are of assistance in sending the monitoring particulars, the user will be notified with an update if any errors are found, for the efficient functioning of the device. |

| | | |
|-------|--------------|---|
| NFR-4 | Performance | <ul style="list-style-type: none"> ● The web Page's load time should be no more than one second for the user's elevated performance concerning simple aidance and security. ● The originality of the system is that it spontaneously alerts the parents/caretaker by sending an SMS when instant attention is indispensable for the child during a crisis. ● The complete data of the children's location will be stocked in the repository and the execution of the device diminishes in a less network area. |
| NFR-5 | Availability | <ul style="list-style-type: none"> ● The device is used to keep tabs on your child even in a horde. ● It also provides the current location along with travel details. ● This system is advanced using a board programmed in embedded C and python. ● It is a site that is available online. |
| NFR-6 | Scalability | <ul style="list-style-type: none"> ● This methodology can be further enhanced by the installation of the mini camera inside a smart gadget for exemplary security and protection so that a glimpse can be caught on the live footage on the parental phone during panic circumstances. ● If an intricacy arises parents can see some of the attributes like the location, temperature, and heartbeat of the child along with living perspective around the children without deterrence. |