**Project Design Phase-II**

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

|  |  |
| --- | --- |
| Date | 03 October 2022 |
| Team ID | PNT2022TMID44628 |
| Project Name | IOT Based Child Safety And Monitoring System |
| 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 | Problem Statement (Problem to be Solved) | More family’s spent their time for work and social duties but since Children are gift of GOD they need care of family. The current situation of our country is not confortable for monitoring children in school. With the absence of child monitoring system it is hard to monitor the where about of children.  The poor performance of family’s and school to monitor the children’s by Collaboration. The use of manual system to connect family’s and there students most of time teachers or other persons are intermediate between the students and family. In our country families and their children have no direct contact in school when they need to contact their children if the families came to school. |
| FR-2 | Idea / Solution description | The scope of this project is limited to develop SMS platform and Hardware implementation prototype. The project contribution is sensing the children status and displaying the output. This system also provides the real time data to be available on mobile phone, so that it can send text message all the sensors data gathered from the children. |
| FR-3 | Noverty / Uniqueness | * To track and get exact location of children * It increase the interaction of family’s with their children * They whole day information about children * To store and retrieve the necessary data on the families mobile phone using real time sensors * Child has the ability to connect different sensors * Family’s Feeling safe about children * Allows a parent to more easily locate the troubled child |
| FR-4 | Social Impact / Customer Satisfaction | The Inernet of Things is increasingly finding a place at the heart of many business automation strategies . Companies are using sensors in the logistics chain to help them track where delivery is with incredible accuracy. |
| FR-5 | Scalability of the Solution | Since we use accurate sensing materials the necessary data are gathered in technical way due \to this controlling of children status and check their security is also technically feasible. The school monitoring system with the website has the advantages for availability, management and running costs comparing with the previous monitoring system. |
| FR-6 | Business Model (Revenue Model) | The GSM is Remote Management , Speed, Super Fast Deployment. |

**Non-functional Requirements:**

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

|  |  |  |
| --- | --- | --- |
| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | Human factors, Aesthetics, Consistency, Documentations . |
| NFR-2 | **Security** | “Android based solution to aid parents to track their children in real time. Different devices are connected with a single device through channels of internet. The concerned device is connected to server via internet. The device can be used by parents to track their children in real time or for women safety. The proposed solution takes the advantage of the location services provided by GSM. It allows the parents to get their child‘s location on real time by SMS. This device will also have the facility of Emergency help key (SOS), if anyone presses the key, automatic help message will be sent to 3 registered mobile numbers on Server.” |
| NFR-3 | **Reliability** | Frequency, Recoverability, Predictability, Accuracy, Mean time to failure. |
| NFR-4 | **Performance** | Speed, Efficiency, Through put, Resource consumption. |
| NFR-5 | **Availability** | * The system shall give the accurate result for different factors using sensing material as a result their will not be any distractive damage. * The system shall be maintainable whenever faller occurs. * Sometime the GPS module works on rainy condition. * The system is cost effective comparing to the features it provides. * The system shall be usable within a few minutes training. |
| NFR-6 | **Scalability** | The major challenge may be to spread the knowledge and awareness about the system to the various stakeholders, particularly the family’s .The cost of infrastructure modernization and maintenance is another challenge. In order to use this system the family’s need to link with global network and technology this may lead to go for hardest work. The other limitation of this project is the availability of global network around the rural area of the country. |