**Project Design Phase-II**

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

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| Date | 14 October 2022 |
| Team ID | PNT2022TMID30308 |
| Project Name | Project – Real-time River Water Quality Monitoring and Control System |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| --- | --- | --- |
| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Requirement | Monitoring river water quality in means of characters like DO, Ammonia, pH, etc. |
| FR-2 | User Registration | Manual Sign-up using E-mail ID and Password  Manual Sign-up using Mobile Number and Password |
| FR-3 | User Confirmation | Confirmation via Email  Confirmation via Message |
| FR-4 | Product Delivery and Installation | Installed Wireless sensor Inline by river bed and Data representation using web UI |
| FR-5 | Alert & Notification | Once the threshold value is crossed and then then process of alert begins |

**Non-functional Requirements:**

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

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| --- | --- | --- |
| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | Have clear and understandable instructions. Easier to use. Even illiterate farmers can use the product without any problems |
| NFR-2 | **Security** | The application must be secured with a two-factor authentication password, and the access key will be assigned according to the user's need. |
| NFR-3 | **Reliability** | Hardware requires regular inspection and service. The software may be updated over time as needed. An immediate notification is activated in case of any system failure. |
| NFR-4 | **Performance** | The application must have a user-friendly user interface and logic. It should have minimal energy requirements. Reported data and alerts must be very accurate and up-to-date. |
| NFR-5 | **Availability** | All functions will be available to the end user whenever they need them. Real-time graphical monitoring data will be available 24/7 through the web application. |
| NFR-6 | **Scalability** | The product is available 24/7, Monitored data from the river is provided live to the user. Once the changes reach the threshold, it notifies the user through the web UI as well as an email or SMS to the provided mobile number. |