**Project Design Phase-II**

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

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| Date | 15 October 2022 |
| Team ID | PNT2022TMID41928 |
| Project Name | Real time water quality monitoring and control system |

**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 | Arduino(control system) | Sensors are interfaced to Arduino and it collects measurements data periodically from sensors. |
| FR-2 | WSN Sensor | Multiple sensor nodes installed for the detection of pH, temperature, dust particles, turbidity |
| FR-3 | Software Design Requirements | WSN requires IoT platform which requires Neural  Network Model to classify water quality as Good Or Bad. IoT integrated big data analytics to store data in cloud and analyze it constantly.. |
| FR-4 | pH level Detection | To monitor the water quality Ph sensor is used and the signals are sent to Arduino. |
| FR-5 | Turbidity Detection | Turbidity sensor measures the clarity of element or muddiness utter in the water and the signals are send to Arduino. |

**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** | To determine the drinking water quality using pH,Turbidity |
| NFR-2 | **Security** | Mobile application is secured with firewalls protection. |
| NFR-3 | **Reliability** | Real time sensor output values with future predicted data storage. 98% efficient monitoring output. It also gives assurance for aquaculture safety |
| NFR-4 | **Performance** | High performance because of the system  Efficiency |
| NFR-5 | **Availability** | In form of mobile UI 24 x 7 monitoring system |
| NFR-6 | **Scalability** | More number of users can be access thedata |