

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

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|---------------|--|
| Date          | 18 October 2022  |
| Team ID       | PNT2022TMID07826   |
| Project Name  | IOT Based Real Time River Water Monitoring and Control Systems |
| 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             | Registration through Form<br>Registration through Gmail<br>Registration through product mobile UI                                    |
| FR-2   | User Confirmation             | Confirmation via Email Confirmation via OTP  |
| FR-3   | Ph level detection            | Ph sensor is used to monitor the water quality and the signals are send to Arduino.  |
| FR-4   | Turbidity detection           | Turbidity sensor TS-300B measures the turbidity (counter of suspended matter) in the wash water and the signals are send to Arduino. |
| FR-5   | Ultrasonic generator          | Waves generated at regular interval times to clear algae 25% ,50%, 100%  |

**Non-functional Requirements:**

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

| FR No. | Non-Functional Requirement | Description  |
|--------|----------------------------|--|
| NFR-1  | <b>Usability</b>           | Efficient to use and has simple monitoring system.   |
| NFR-2  | <b>Security</b>            | Mobile application is secured with firewalls protection.   |
| NFR-3  | <b>Reliability</b>         | Real time sensor output values with future predicted data storage. 98% efficient monitoring output. Assurance for aquaculture safety |
| NFR-4  | <b>Performance</b>         | Greater performance and environmentally safe model.  |
| NFR-5  | <b>Availability</b>        | In form of mobile UI 24 x 7 monitoring system.   |
| NFR-6  | <b>Scalability</b>         | Highly Scalable. It is capable to produce a best final output.   |
| NFR-7  | <b>Stability</b>           | It is highly stable.   |
| NFR-8  | <b>Efficiency</b>          | It is highly efficient and it has simple monitoring system.  |