PROJECT DESIGN PHASE-II

SOLUTION REQUIREMENTS (FUNCTIONAL&NON-FUNCTIONAL)

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| TEAM ID | PNT2022TMID17622 |
| PROJECT NAME | Real-Time River water Quality Monitoring and Control System |
| MAXIMUM MARKS | 2 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 | Arduino(control system) | Sensors are connected to Arduino, which takes measurement data from them on a regular basis. |
| FR 2 | Ph level detection | Ph sensor is used to monitor the water quality and the signals are send to Arduino. |
| FR 3 | Turbidity detection | The turbidity sensor TS-300B monitors the turbidity in the water and sends the results to Arduino. |
| FR 4 | Ultrasonic generator | Waves created at regular intervals to remove algae at 25%, 50%, and 100% |

NON-FUNCTIONAL REQUIREMENTS:

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

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| NFR NO: | NON-FUNCTIONAL REQUIREMENT | DESCRIPTION |
| NFR 1 | Usability | Water quality must be monitored to ensure that it is safe for humans to drink as well as for wildlife and marine life, as well as to understand environmental implications and to avoid harming sea life. |
| NFR 2 | Security | IoT networks are extremely secure, and communication speeds are fast. All concerns are easily resolved with technology. |
| NFR 3 | Reliability | The water quality and monitoring system is dependable, and its production is guaranteed. Because standardized hardware and software designs are employed. |
| NFR 4 | Performance | Water quality is monitored in real time, and authorities are notified if the quality is poor. |
| NFR 5 | Availability | The monitoring system is made accurate and ready for usage at any moment. |
| NFR 6 | Scalability | The system with high scalability and low-powered system. |