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

Date	21 October 2022
Team ID	PNT2022TMID07167
Project Name	Real-Time River Water Quality Monitoring and Control 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	Arduino (Control system)	Used to interconnect and interface other device with sensors and collect data periodically for transferring
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 analyse it constantly.
FR-4	LCD/PC/Mobile display	Displays the resulting sensed pH, temperature, turbidity. If ,acquired value > Threshold value, then comment=BAD. If, acquired value < Threshold value, then comment=GOOD.
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	**Usability**	To monitor the water quality and to ensure that, it is safe for humans to drink it as well as for wild life and marine life
NFR-2	**Security**	The IoT networks are incredibly safe and communication speed is also high. The technology comfortably resolves all the issues.
NFR-3	**Reliability**	The sensors and other devices are 100% reliable that it produces accurate results
NFR-4	**Performance**	The performance of the system is faster that it immediately alerts the authority if the water is not pure
NFR-5	**Availability**	It can be made available at any places where river water is used and can be accessed 24x7.
NFR-6	**Scalability**	The system can produce best final output with low power, High frequency and high mobility.