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

Date	
Team ID	PNT2022TMID20106
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.

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	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.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	It is important to monitor water quality to ensure that, it is safe for humans to drink it as well as for wild life and marine life and to understand environmental impacts and to not harm sea 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 water quality and monitoring system is reliable and it's output can be assured. Since standardized hardware components and software designs are used.
NFR-4	**Performance**	Real-time quality of water is executed and alertring the authorities if water quality is not good.

NFR-5	**Availability**	The monitoring system is made available for use at any time with accuracy.
NFR-6	**Scalability**	The system with high frequency, high mobility and low powered and cost-effective.