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

Date	15 October 2022
Team ID	PNT2022TMID50000
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	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Benefits	With the dearth of quality source water a major and worsening issue for utilities and industry, water-level monitoring is paramount for successful operations as is stepping up to IoT technology.
FR-4	Strength	populations to become conscious against contaminated water as well as to stop polluting the water.
FR-5	Specification	will immensely help people to become conscious against using contaminated water as well as to stop polluting the water
FR-6	Security	This data can be accessed by the authorized users by logging into their accounts using a User ID and password to view data. The data is collected, processed, analyzed, and transmitted and displayed all in real time.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	To measure water parameters such as pH, dissolved oxygen, turbidity, conductivity, etc. using available sensors at a remote place
NFR-2	**Security**	This data can be accessed by the authorized users by logging into their accounts using a User ID and password to view data. The data is collected, processed, analyzed, and transmitted and displayed all in real time
NFR-3	**Reliability**	wireless sensor networks with low power consumption, low-cost and high detection accuracy. pH, conductivity, turbidity level, etc.

NFR-4	**Performance**	create a system that uses wireless sensor networks to continuously monitor river water quality at remote locations with low power consumption, low cost and high detection accuracy.
NFR-5	**Availability**	High availability of data is provided by the HBase as it is stored in HDFS.
NFR-6	**Scalability**	The research is conducted focusing on monitoring river water quality in real-time. Therefore, IoT integrated big data analytics is appeared to be a better solution as scalability can be provided.