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

Date	19 October 2022
Team ID	PNT2022TMID10555
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	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Hydroxilic level detection	to detect the presence of hydroxilic acid a pH test is imminent. So a pH sensor is used to detect the pH value of river water,periodically.
FR-4	Dust presence in water	To detect the dust presence in water we need to analyze it with a parameter called turbidity. for that we use turbidity sensor.
FR-5	Reaction turbine generator	for energy production for system to have self produced power methods as well as to clean the most pollutants of river waters such as bacteria,we use reaction turbine generator as Rivers come under low head.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	time continuous monitoring and quality control produced by the system, more effective and less complexities
NFR-2	**Security**	Data encryptions at front end and back end is applied to the Android application.Proxy servers can't disrupt or hack as sufficient protective measures taken at architecture level of app itself.
NFR-3	**Reliability**	A safe and secure system, that assures living aspects for all beings from aquatic to land species.System has embarked efficiency in energy management and data management. A trustworthy and profitable system that constructed with advanced data analytics procedure that can provide a dynamic quality monitoring and control system.
NFR-4	**Performance**	As the different technolofocal blocks can itself define an system based on eco friendly and innovative product facilitating people's life on daily basis. Chances of entropy is less due to high end engineering (Careful executing of Architectural design and pretty planned process models.)
NFR-5	**Availability**	Customer service available for 24/7 ,query handled via high end UI via agency. Also monitoring, analysing and streaming of sensed parameters, values are handled by cloud services which can be viewed via mobile app.
NFR-6	**Scalability**	High accuracy due to preset architectural design gives it a product of high scalability.also the product is developed just to meet up with customers core constraints.the system can be developed based on people's innovative ideas as this product is scalable for later upgrades and versions ,as well for other products based on it.
NFR-7	**Stability**	stability is perfectly explained as a highly stable system based on greater power management strategies and definite design.
NFR-8	**Efficiency**	Low Power consumption and High performance .