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

Date	15 October 2022
Team ID	PNT2022TMID00036
Project Name	Project - Realtime River Water Monitoring and Control System by IoT
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	Data Gathering	The WSN must be able to detect and the temperature of a particular area in real.
FR-2	Location Detection	The WSN must be able to detect when a wearable device has entered an areanear it.
FR-3	Wireless Sensor Network	The WSN must be able to share its stored data with both the wearable device and admin dashboard through the cloud.
FR-4	Wearable Device Display	The wearable device must be able to display the temperature of the area where the worker is currently present.
FR-5	SMS Notification	If the temperature of the area is found to reach dangerous levels, the worker should be informed via SMS to their phone instructing them to leave the area.
FR-6	Admin Dashboard	If the temperature of the area is found to reach dangerous levels the admin is informed via the dashboard and must take the necessary precautions.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The wearable device should be slim and not annoy or disturb the workers who are wearing them. They should also reliably display the temperature without large delays and notifications should be clear in cases of detected danger.
NFR-2	**Security**	The connection of the WSN to the cloud and wearable devices should be secure. The security of the database housing all the temperature data should also be bolstered.
NFR-3	**Reliability**	The wearable device should be able to function without any faults even at dangerous temperatures. If a fault is detected it should notify the user and the admin to be immediately repaired and replaced. The WNS should also be regularly maintained to ensure reliability.
NFR-4	**Performance**	The device should update temperature readings in real time and requires high end sensors and processors to do so. The time to send data to the cloud and other devices should also be made as small as possible.

NFR-5	**Availability**	The user should be able to check the temperature of the area no matter where or at what time they are in the plant. The dashboard should be constantly active so as to ensure safety precautions can be executed whenever danger is detected.
NFR-6	**Scalability**	If the area that needs to be monitored needs to be increased all one has to do is install new WSN devices and connect them to the same system as the previous beacons. It can also be replicated in different plants with different factors to be monitored giving it highly scalability.