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

DATE	6 October 2022
TEAM ID	PNT2022TMID28196
PROJECT TITLE	HAZARDOUS AREA MONITORING IN INDUSTRIAL PLANT POWERED BY IOT
MAXIMUM MARKS	4

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 E mail and Phone Number for verification
FR-2	User Confirmation	Confirm user by sending a verification link and OTP to the mobile number.
FR-3	Rule and Regulations	Share the guidelines to be followed during the initialization process
FR-4	Tracking devices	The device must be able to collect and send 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 users shouldn't feel the device on their helmet, i.e, it must of light weight The temperature sensor and controllers must be highly responsive in transmitting data.

NFR-2	**Security**	The data must be encrypted within the cloud and industrial network. 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 beacons 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 smart beacon 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.