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

Date	03October 2022
Team ID	PNT2022TMID01115
Project Name	Hazardous area monitoring 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 temperature sensors like thermistors, thermocouples and RTD's must be able to sense the change in temperature.
FR-2	Location Detection	The GPS must be able to detect the location when the employees enter the hazardous area.
FR-3	Data Syncing	The I-Net control gas detection software must be able share the data to both the employees and the admin through the cloud.
FR-4	Thermistor Device Display	The thermistor device must be able to sense and display both the temperature and pressure where the worker is currently present.
FR-5	SMS Notification	If the temperature changes and reaches to dangerous levels, then the employees must be notified with an SMS and should be able to leave the place immediately.
FR-6	Admin Dashboard	If there is a difference in the temperature and before it reaches the dangerous level, the admin must be informed and he must take 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 (RF ID card) must be smart, accurate and light weight. It should display the difference in temperature accurately and immediately without any delays.
NFR-2	**Security**	The connection of the temperature sensors to the wearable device and the cloud must be very safe and secure. The security of the database housing all the data containing the temperature must be kept secure and non hackable.
NFR-3	**Reliability**	The RF ID card should be able to perform accurately without any issues even during calamities.

		If there is any fault that is detected, the sensor should be rectified immediately. The sensors should be regularly updated and maintained so that the reliability is ensured.
NFR-4	**Performance**	The temperature sensors should be able to update the readings in real time and this process requires high end processors and devices. The time taken to send the data information to the admin, other devices and the cloud should be very limited.
NFR-5	**Availability**	The employee should be able to check the temperature and the pressure of the hazardous area anytime, anywhere. The administrative department should be constantly active so as to provide immediate safety measures whenever the sensor shows a caution.
NFR-6	**Scalability**	If the area of the hazardous plant that needs to be monitored is increased, we can install more thermistors, thermocouples and RTD's for an overall efficient monitoring. This can be done in different plants in different ways, thereby increasing the scalability to an higher extent.