

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

Date	05 November 2022
Team ID	PNT2022TMID54463
Project Name	Industry-specific intelligent fire management system
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.1

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Smoke Alarm (Photoelectric Smoke Detectors, and Ionization Smoke Detectors)	These devices are one of the best early-warning devices of a fire. They are designed to sense low levels of smoke and sound an alarm.
FR-2	Fire Alarm System (Conventional Analogue Fire alarm system, Addressable Analogue Fire alarm system, Wireless Fire alarm system)	The main bone of this system is the Circuit board. The single circuit board contains power supply, control, and initiating and notification circuitry.
FR-3	Wireless Fire Alarm System	This system consist of a central control panel to which smoke alarms and heat detectors are connected, along with bells or horns that are activated when the system triggers an alarm.
FR-4	RF wireless technology	It is a short distance, low-complexity, low-power, low data rate, low-cost two-way wireless communication technologies, mainly suitable for the field of automatic control and remote control can be embedded into various devices.
FR-5	System Display	The design of the CPU shall provide for a configuration with the 64-character display, it shall provide all the controls and indicators used by the system operator, the system shall support the display of battery charging current and voltage on the LCD display.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	This system can be used at the commercial level and results are reproducible.
NFR-2	Security	Addressable systems provide a greater level of fire safety because they allow fire-fighters to respond more quickly and effectively by pointing the exact location of a fire in a building.
NFR-3	Reliability	If one end becomes damaged or severed, signals can still reach the control panel through the other end of the loop.
NFR-4	Performance	The proposed system more efficient, robust and reliable; and reduces false alarms; the proposed

		system used easily available, lightweight and cost-effective sensors and is more reliable than conventional fire detection systems.
NFR-5	Availability	It can be made available at any place where river water is used and can be accessed 24x7.
NFR-6	Scalability	Because they require less wire, an addressable alarm control panel can accommodate far more devices than a conventional system.