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

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Project Name	Emerging Methods for Early Detection Of Forest fire
Domain	Artificial Intelligence

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	Data Prediction	Scientists create computer models to predict wildfire potential under a range of potential climate futures. Using different projections of temperature and precipitation, scientists predict where and when wildfires are most likely to occur.
FR-4	Using Sensors	This Bosch environment sensors installed in the forest fire detection system using artificial intelligence deployed as early wildfire warming tool.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Monitoring of the potential risk areas and an early detection of fire can significantly shorten the reaction time and also reduce the potential damage as well as the cost of fire fighting.
NFR-2	**Security**	A fire alarm system warns people when smoke, fire, carbon monoxide or other fire-related or general notification emergencies are detected.
NFR-3	**Reliability**	It has achieved 1.24 seconds of classification time with an accuracy of 91% and F1 score of 0.91.
NFR-4	**Performance**	initially, “internal” demonstration activities without user involvement were organized, including controlled fires and artificial smoke tests to validate system functionalities, verify the correct operation of sensors and test system performance.
NFR-5	**Availability**	The experiment results show that the proposed h-EfficientDet can detect the fire in real-time with the detection speed of 21 FPS. The detection accuracy is up to 98.35% with a low miss detection rate.

NFR-6	**Scalability**	The current requirement for a cargo compartment detection system is that a fire has to be detected in 1 minute, and in that time be so small that the fire is not a significant hazard to the airplane. Nuisance alarms also plague the industry, with upwards of 90% of fire alarms being false warnings