Project Design Phase-II
Functional & Non-functional Requirements

Date	26 October 2022
Team ID	PNT2022TMID01865
Project Name	Project - EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES
Maximum Marks	4 Marks

FUNCTIONAL REQURIEMENTS:

The functional requirements of the proposed solution are as follows.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story/Sub-Task)
FR 1	Begin monitoring images	A trained model is used to begin satellite surveillance.
FR 2	Image processing is being used to monitor the fire.	Camera monitoring of precise location
FR 3	Fire will be detected.	Fire is detected through CNN Model.
FR 4	Alert message	sending a notification to the fire department

NON-FUNCTIONAL REQUIREMENTS:

The non-functional requirements of the proposed solution are as follows.

NFr. No	NON-FUNCTIONAL REQUIREMENT	DESCRIPTION
NFr. 1	**Usability**	The application can be enhanced by training the model with a larger dataset consisting of fires at various stages and dimensions. With higher GPU memory, we could use two deep learning models for feature extraction, whose output feature vectors are concatenated and classified to offer more robustness.
NFr. 2	**Security**	CCTV cameras with high resolution and power are used. Image processing and 24-hour monitoring are used to locate the fire.
NFr. 3	**Reliability**	The application will also perform significantly better when run on machines with greater processing power than the one on which it was developed.
NFr. 4	**Performance**	Fire localization and classification can be implemented using an R-CNN model. Better deep learning architectures with better feature extraction are also expected to emerge in the future.
NFr. 5	**Availability**	By upgrading to a more advanced system that detects and alerts on fires using real-time CCTV cameras. For detecting fire in captured images, the convolutional neural network algorithm is extremely useful.
NFr. 6	**Scalability**	We can prevent loss of life and resource damage by detecting forest fires early, while also reducing air pollution, landslides, soil erosion, and emission emissions into the environment.