Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	15 October 2022
Team ID	**PNT2022TMID43779**
Project Name	Emerging Methods for Early Detection of Forest Fires
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 Collection	Capture live images of the forest via drone. Process the image. Send the image to the model to predict for forest fire.
FR-2	Fire Detection	The model predicts if forest fire is happening or not. If there is no fire detected, then process the next image.
FR-3	Alert the Authorities	If forest fire has been detected, authorities like Fire Service, Forest Officials, and The Police are to be confirmed first. Give information about the fire location through GPS. Give the Fire Spread range measured by the model.
FR-4	Mitigation Plan	An action plan can be co-ordinated with the authorities to get people to safety. This will be implemented in the later updates.
FR-5	Extending Knowledge base	The predicted fires will be added to the data collection (Knowledge base) of the model to train it further. This helps in improving the model performance.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The system needs to be user friendly so that it takes less time to use the system. The interface should be simple but effective to make the user understand what happens in the process.
NFR-2	**Security**	User information should be secured so since others need not know any peculiar information other than location of the fire. So the minimal security features need to be present.
NFR-3	**Reliability**	The system should be quite reliable without a shadow of doubt. Probability of a wrong prediction should be as low as possible to avoid chaos since there are lives at stake along loss of property.
NFR-4	**Performance**	The performance mostly depends on how much monitoring is done in the forest. It must be processed and detected within a fraction of seconds using the model. We can have no compromise in

		terms of performance nor can we have any other factor be let down for better performance as well.
NFR-5	**Availability**	The availability of the solution is effective and it should be helpful to suppress the fire without any great damage by early detection. The system should be available for all types of forest.
NFR-6	**Scalability**	This solution should be able to monitor several forests across the world at the same time and predict fires and report it to the authorities as soon as possible. That would be the most desirable outcome in terms of scalability.