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

Date	15 October 2022
Team ID	PNT2022TMID06174
Project Name	Project - 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	Dataset Collection	A huge dataset is needed to train the model. Images of forest fire needs to be processed to train the model.
FR-2	Image Pre-Processing	Image pre-processing involves applying Image Data Generator on train set and test set.
FR-3	Model Building	A part of the collected dataset will be used to build model. Building model involves adding CNN layers, hidden layers and output layers, configure the learning process and optimize the model.
FR-4	Model Training	The other part of the dataset will be used to train the model. Training will be done a number of times to optimize the process.
FR-5	Setting Software	After multiple testing and training, the model built will be used for setting the software.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Forest fire detection is one of the practically important issues in our world. The most difficult task is to detect fire and alert without any delay. This software will be efficient in detecting and alerting.
NFR-2	**Security**	Using python Flask in connecting cloud will provide security to the project.
NFR-3	**Reliability**	This system not only increases the sensing time of fire, but also reduce complexities.
NFR-4	**Performance**	By increasing the number of training examples, the accuracy of the system can be increased. The performance of this method will be significantly better than all conventional methods.
NFR-5	**Availability**	Since we use cloud, the availability of this software is all over the world only Internet facility is needed.
NFR-6	**Scalability**	This technique could be used for analysing soil conditions and water pollution in future.