Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	25 October 2022
Team ID	PNT2022TMID40070
Project Name	AI Based Discourse For emerging method 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	fuel	**uncontrolled fire occurring in vegetation more than 1.8 metres (6 feet) in height**. These fires often reach the proportions of a major conflagration and are sometimes begun by combustion and heat from surface and ground fires.
FR-2	oxygen	**Avoid burning wastes around dry grass. Don't start a fire on a windy day. Use a can or fire pit. Never burn household wastes when any regulations of wildfire prevention policy prohibit it**.
FR-3	conditions	Fire spread depends on the principal methods of heat transfer: **conduction, convection, radiation and direct burning**.
FR-4	Capturing type	Easy to capture
FR-5	objective	Rate of burning and heat output for surface and crown fires are influenced by **fuel load, fuel moisture, topography, ignition method, air temperature, wind, and relative humidity**.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The Fire Behavior Triangle. Just like there is a fire triangle, made up of heat, oxygen, and fuel, there is another triangle called the fire behavior triangle. The three legs of this triangle are **fuels, weather, and topography**. The sections below go more in depth into each of thise and their influence on fire.
NFR-2	**Security**	**Many forest fires start from natural causes such as lightning which set trees on fire**. However, rain extinguishes such fires without causing much damage. High atmospheric temperatures and dryness (low humidity) offer favorable circumstance for a fire to start.
NFR-3	**Reliability**	a set of specifications that describe the system's operation capabilities and constraints and attempt to improve its functionality
NFR-4	**Efficiency**	***Efficiency*** measures how well the system uses processor capacity, disk space, power, memory, or input/output (I/O) communication bandwidth [5]. It also measures the system's capability to convert mechanical and electrical energy.
NFR-5	**Availability**	is an indicator of the planned up time where the system is available for use and fully operational. Availability is the mean-time-to-failure (MTTF) for the system divided by the sum of the MTTF and the mean-time-to-repair the system after a failure occurs. Availability encompasses reliability, maintainability, and integrity [4]..
NFR-6	**Portability**	Burning Debris. One of the most common causes of wildfires is burning debris. ... Irresponsible Campfires. ... Unextinguished Cigarettes. ... Vehicle Crashes and Malfunctions. ... Arson. ... Lightning. ... Lava.