Project Design Phase-II

**Solution Requirements (Functional & Non-functional)**

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| Date | 9 November 2022 |
| Team ID | PNT2022TMID27543 |
| Project Name | Emerging Methods for Early Detection of  Forest Fires |

# Functional Requirements:

Following are the functional requirements of the proposed solution.

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| **FR No.** | **Functional Requirement**  **(Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | Registration through the registered government ID |
| FR-2 | User Confirmation | Confirmation via OTP |
| FR-3 | User Login | Login using credentials |
| FR-4 | User Search | Search for Info on forest fire occurrence |
| FR-5 | User Profile | User shall be given a live feed of the forest |
| FR-6 | Overall Surveillance Report | Helps to understand the current scenario in the forest by giving report as “no fire” or “negative”. |
| FR-7 | Cloud Server Access | To save and run the model from the camera  footage |
| FR-8 | Live Camera Feed | Real-time monitoring by the forest officials |
| FR-9 | GSM Module | To alert the nearest forest range officer and the local fire department |
| FR-10 | Alert | The system will send notification to the user when fire is detected |

# Non-functional Requirements:

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

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| **FR**  **No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | Governments who manage reserve forests, large  corporations that own acres of land where they grow trees for profit, NGOs that work to |

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|  |  | conserve forests, and the forest department can all make use of this project as a service to track  the activity of endangered species. |
| NFR-2 | **Security** | The server is an IBM cloud, which has very excellent encryption standards, to assure security in the monitoring process. Only government of company’s officials have access to these files.  OTP will conduct additional security checks as confirmation. The backup videos will be kept on  the IBM cloud server. |
| NFR-3 | **Reliability** | The project is very much reliable compared to an previous generation open-source forest monitoring system where the data can be easily manipulated and this is much robust as the initial cost is higher while there will be no need for any  maintenance cost |
| NFR-4 | **Performance** | This initiative outperforms other technologies for detecting forest fires, such as satellite monitoring, IOT sensors, and the usage of IR sensor-based cameras. Over time, this model  becomes more accurate. |
| NFR-5 | **Availability** | This data is only accessible to officials since it contains sensitive information about thousands of acres of forest lands. As the AI model is connected to the IBM server, this can therefore be opened anywhere by the authorised  individual. |
| NFR-6 | **Scalability** | The initial setup costs more than other ways, but there will be reduced or no maintenance costs, and the cost to halt a forest fire and the pollution and wildlife lost is considerably greater than the initial setup costs.  Given that they are much easier to implement, the project can readily be scaled to encompass  bigger areas of the forests. |