**Project Design Phase-**
**IITechnologyStack(Architecture&Stack)**

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|---|---|
| Date | 31October2022 |
| TeamID | PNT2022TMID25599 |
| ProjectName | Emerging MethodsforEarlyDetectionofForestFires |
| MaximumMarks | 4Marks |

**TechnicalArchitecture:**

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD candepict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes theinformation,andwhere dataisstored.

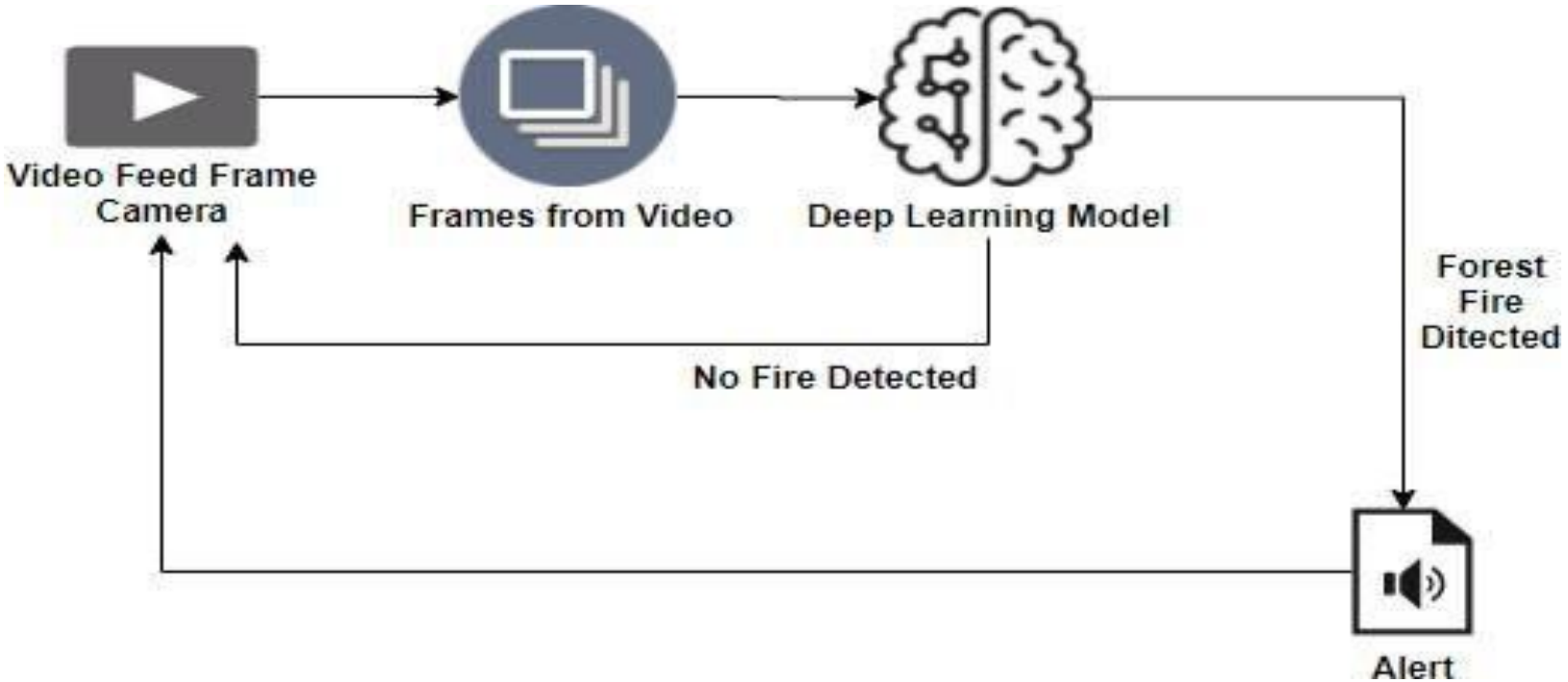

**Table-1:Components&Technologies:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | UserInterface | Howuserinteractswithapplicatione.g.MobileApp, databasesystem | HTML,CSS,JavaScript/AngularJs/ ReactJsetc. |
| 2. | ApplicationLogic-1 | Logicfor aprocessintheapplication | Java/Python |
| 3. | Camera | Logicfor aprocessintheapplication | FPVCameratechnology |
| 4. | Smokesensor | Logicfor aprocessintheapplication | MQZ,etct |
| 5. | Database | DataType,Configurationsetc. | MySQL,NoSQL,etc. |
| 6. | CloudDatabase | DatabaseServiceonCloud | IBMDB2, IBMCloudantetc. |
| 7. | databasesystem | Filestoragerequirements | OtherStorageServiceorLocal Filesystem |
| 8. | Rotary--wingUAV | Purposeoffirefightingusedintheapplication | IBMWeatherAPI,etc. |
| 9. | EFixed--wingUAV | Purposeofweathermonitoring.usedinthe application | AadharAPI,etc. |
| 10. | MachineLearningModel | PurposeofMachineLearningModel | ObjectRecognitionModel,etc. |
| 11. | Infrastructure(Server/Cloud) | ApplicationDeploymentonLocalSystem/Cloud<br>Local Server<br>Configuration:CloudServerC<br>onfiguration: | Local,CloudFoundry,Kubernetes,etc. |

**Table-2:ApplicationCharacteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-SourceFrameworks | Listtheopen-sourceframeworksused | TechnologyofOpensourceframework |
| 2. | SecurityImplementations | Listallthesecurity/accesscontrolsimplemented, useoffirewallsetc. | e.g.SHA-256,Encryptions,IAMControls, OWASPetc. |
| 3. | ScalableArchitecture | Justifythescalabilityofarchitecture(3–tier,Micro-services) | Technologyused |
| 4. | Availability | Justifytheavailabilityofapplication(e.g.useofloadbalancers,distributedserversetc.) | Technologyused |
| 5. | Performance | Design consideration for the performance of theapplication (number of requests per sec, use ofCache,useofCDN’s)etc. | Technologyused |