**Project Design Phase-I**

ARCHITECTURE OF THE PROPOSED FOREST FIRE

DETECTION SYSTEM

|  |  |
| --- | --- |
| Date | 19 September 2022 |
| Team ID | PNT2022TMID09860 |
| Project Name | Early detection of forest fire |
| Maximum Marks | 2 Marks |

**Architecture and Management of Proposed System**

There are four main components in the IoT system and these are sensor nodes, gateways, Internet servers and end users (for example, fire fighters and the public, etc.). A star network topology is adopted in the connection between the sensor nodes and the gateways. The proposed system adopts the cluster topology and hierarchical routing protocols. The nodes members transmit their data to the cluster head, which will transmit to the base station.

**Sensor Node:**

Several questions can be asked when deploying a network of sensor nodes; how many nodes of sensors to put in a forest area, the choice of sensors according to their prices and their qualities. Indeed, all these questions are very important to validate the technical and commercial feasibility study. At this stage, we opted for a reliable and low cost solution to then validate the study on a concrete case and in the field. The sensor node must essentially consist of a microprocessor, sensors, a long-range, low-consumption transmission part and an energy source optimized for a long duration

**Servers and Applications:**

Through this project we are trying to build a software and hardware platform capable of monitoring the state of the forest and signaling the risk and the appearance of a fire in the forest.

This intelligent system will be able to observe the external environment through sensors, send metrics to a database, and then process this information through deep learning models to

make the right decision.

**Refrences:**

Giglio, Louis, W. Schroeder and Christopher O. Justice, “The Collection

6 MODIS Active Fire Detection Algorithm and Fire Products.” Remote

Sensing of Environment 178:31–41, 2016.

R. Dey and F. M. Salemt, “Gate-variants of Gated Recurrent Unit

(GRU) neural networks,” Midwest Symp. Circuits Syst., vol. 2017-

August, pp. 1597–1600, 2017.