

Ideation Phase

Empathize & Discover

Date	23 October 2022
Team ID	PNT2022TMID23834
Project Name	Emerging Methods For Early Detection Of Forest Fires
Maximum Marks	4 Marks

Empathy Map Canvas:

Forest fires are occurring throughout the year with an increasing intensity in the summer and autumn periods. These events are mainly caused by the actions of humans, but different nature and environmental phenomena, like lightning strikes or spontaneous combustion of dried leafs or sawdust, can also be credited for their occurrence.

Regardless of the reasons for the ignition of the forest fires, they usually cause devastating damage to both nature and humans. Forest fires are also considered as a main contributor to the air pollution, due to the fact that during every fire huge amounts of gases and particle mater are released in the atmosphere.

To fight forest fires, different solutions were employed throughout the years. They were primary aimed at the early detection of the fires. The simplest of these solutions is the establishment of a network of observation posts - both cheap and easy to accomplish, but also time-consuming for the involved people.

The constant evolution of the information and communication technologies has led to the introduction of a new generation of solutions for early detection and even prevention of forest fires. Several different scenarios for the possible use of the drones for forest fire detection will be presented and analysed, including a solution with the use of a combination between a fixed-wing and a rotary-wing UAVs. The possibilities for development of systems for early forest fire detection using LoRaWAN sensor networks and we will analyse and present some of the hardware and software components for the realisation of such sensor networks.

The paper will also provide another point-of-view, which will present the involvement of students in the development and in the use of both systems and we will analyse the advantages and the benefits, which the students will gain from their work on and with these solutions.

Empathy Map



