Literature Survey

Emerging Methods for Early Detection of Forest Fires

1)Emerging Methods for Early Detection of Forest Fires Using Unmanned Aerial Vehicles and Lora wan Sensor Networks

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In this paper we have briefly presented two new methods for early forest fire detection, including part of their characteristics and main components. We have also analysed some of the benefits, which these methods can provide to the involved Bachelor, Master and PhD students. Both solutions are still under development, but they show great potential and work on their development and improvement will continue in the following years.

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2) Forest Fire Modelling and Early Detection using Wireless Sensor Networks

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We conducted extensive simulation study to validate our theoretical analysis and to compare our coverage algorithms against others in the literature. The comparisons showed that our algorithms outperform other algorithms along several performance metrics, including convergence time, number of sensors activated, and total energy consumption. Furthermore, our simulations show that our distributed algorithm: (i) balances load across all deployed nodes, and therefore maintains reliable coverage and significantly prolongs the network lifetime; and (ii) can provide various coverage degrees at different areas of the forest, and thus can achieve higher detection accuracy in important areas such as near residential or industrial neighbourhoods.

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