Many communities in Australia and abroad face a significant threat to their livelihood through bushfire [1].

Sensor networks
Small sensors have sensing, processing and transmitting capabilities, that are powered by small batteries can be used to detect and monitor fire.

Data Collection
- The sensor closest to the base station is the first node run out of power since it has to forward data of other sensors to the base station.
- A data mule can roam a sensing field at specific time interval and collect data from sensors through short-range communication and then send it to the base station.

The problem
The trajectory of data mule significantly affects energy consumption among sensors.

Our approach
- Divide sensing field into clusters with equal areas.
- Choose a cluster head for each cluster.

UAV data mule
Data transmitted to cluster head and then to mule.

Performance

Our goal
To prolong network lifetime by finding a trajectory for the data mule such that:
- balances sensors’ energy consumption.
- collects data within a specific time interval.

References