

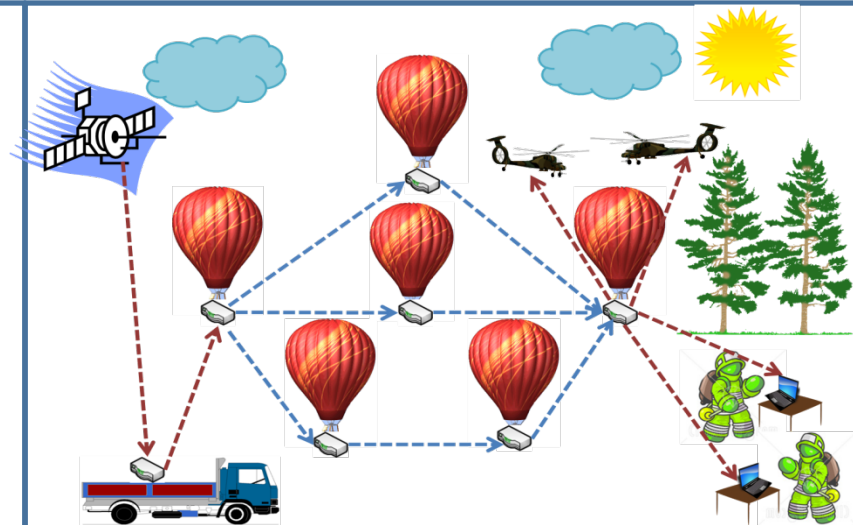


## Motivation

- Regular communication structures fail during a disaster.
- Need for faster communication and large data transfer become crucial.

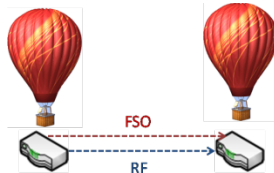
## Objective

- Design a multipath Ad hoc On-demand Distance Vector Hybrid (AODVH) routing protocol for a disaster area.
- Simulate the proposed AODVH protocol in Network Simulator (NS-2).
- Compare the performance of AODVH with three other Ad hoc On-demand protocols (AODV, AOMDV, AODVM).



## Routing Issues in DAWN: Hybrid Links

- “Hybrid” links between routers using two different medium
  - Free Space Optics (FSO)
  - Radio Frequency (RF)
- FSO, even though has high bandwidth and low error rate, may drop in and out due to misalignment and weather attenuation.
- RF is usually on but has low bandwidth and high error rate.
- Two paths exist between a pair of balloons/nodes.



## Our Approach

- Use FSO when available:
  - Line of Sight (LOS) is established
  - No weather attenuation (Fog, Rain, Birds’ flight)
- When FSO drops out, use RF.

## Results

- Evaluated the performance of AODVH using ns-2 simulations.
- Compared with three other Ad hoc routing protocols.
- AODVH has better performance in terms of Packet Loss, End-to-End Delay, Overhead, Route Discovery Frequency and Throughput.