Evaluating the Performance of Standard R outing Protocols in Unmanned Aerial Vehicle (UAV) Contexts

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Abstract:

Recent advances in intelligent transportation systems (ITS) have created new opportunities for the growth of (FANETs), a technology that has now gained wide acceptance in civilian and non-civilian applications due to its ability to cover the areas where static infrastructures are difficult or costly to maintain. The FANET has been constructed from nodes (UAVs) that move fast, which causes frequent changes to the network's topology. Therefore, the FANET needs a routing protocol to be able to communicate efficiently between these devices. In this paper, the effectiveness of OLSR, DSR, and TORA routing protocols in a FANET environment is studied through the simulation experiments that have been conducted to validate the impact of UAV altitude on routing protocols, since these protocols were designed for 2D contexts (flat scenarios). Results demonstrate that hybrid routing protocols perform better in throughput, while proactive protocols introduce a lower end-to-end delay.

Keywords:

FANET, UAV, OLSR, DSR, TORA.