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Minimization of Propagation Delay in Multi Unmanned Aerial Vehicle Network

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Abstract : Unmanned aerial vehicles (UAVs) are becoming increasingly important in various industrial applications and sectors. Nowadays, a multi UAV network is used for specific types of communication (e.g., military) and monitoring purposes. Therefore, it is critical to reducing propagation delay during communication between UAVs, which is essential in a multi UAV network. This paper presents how the propagation delay between the base station (BS) and the UAVs is reduced using a searching algorithm. Furthermore, the iterative-based K-nearest neighbor (k-NN) algorithm and Travelling Salesmen Problem (TSP) algorthm were utilized to optimize the distance between BS and individual UAV to overcome the problem of propagation delay in multi UAV networks. The simulation results show that this proposed method reduced complexity, improved reliability, and reduced propagation delay in multi UAV networks.

Keywords : multi UAV network, optimal distance, propagation delay, K - nearest neighbor, traveling salesmen problem
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