

Cover Letter

Dear Editors,

We would like to submit our manuscript entitled “Energy-Efficient End-to-End Optimization for UAV-Assisted IoT Data Collection and LEO Satellite Offloading in SAGIN” for consideration for publication in Electronics.

This work proposes a two-stage end-to-end optimization framework for space–air–ground integrated networks (SAGIN), addressing both UAV-assisted IoT data collection and LEO satellite offloading. The manuscript makes several significant contributions:

1. A structured uplink framework that jointly optimizes the IoT–UAV data collection process and the UAV–LEO offloading process in a consistent manner.
2. An energy-efficient UAV data collection algorithm integrating NOMA-based user pairing, power allocation, Adam-based hovering refinement, and 2-opt trajectory planning.
3. A demand-aware satellite association strategy that minimizes unnecessary handovers while ensuring stable offloading performance under dynamic satellite visibility.
4. Extensive simulation results demonstrating consistent improvements in UAV energy consumption, trajectory efficiency, satellite handover stability, and end-to-end performance across varying IoT densities and constellation sizes.

We believe the manuscript fits well within the scope of Electronics, particularly in the areas of wireless communications, satellite networks, UAV-assisted systems, and optimization techniques for IoT and 6G technologies.

We confirm that neither the manuscript nor any part of its content is currently under consideration for publication with or published in another journal.

All authors have approved the manuscript and agree with its submission to Electronics.

We also confirm that this manuscript has not been previously submitted to any MDPI journal.

Thank you very much for your consideration. We look forward to your response.

Sincerely,

Tie Liu

(On behalf of all authors)