

**To**

The Editor-in-Chief

*International Journal of Transportation Science and Technology*

[Elsevier / KeAi Publishing]

**Subject:** Submission of Manuscript Titled "*Enhanced Long-Range Based Location Tracking and Fall Detection System*"

Dear Editor,

We are pleased to submit our original research article entitled "*Enhanced Long-Range Based Location Tracking and Fall Detection System*" for possible publication in the *International Journal of Transportation Science and Technology*.

This manuscript presents the development of a novel five-node LoRa-based star topology communication system designed for real-time location tracking and emergency detection in remote and mountainous terrains. The system comprises four portable ESP32-based sensor nodes with GPS and BMP280 sensors, communicating with a central gateway using SX1278 LoRa modules at 433 MHz. The central node provides a Wi-Fi-based offline web dashboard for real-time visualization and emergency coordination, operating independently of internet connectivity.

Validated over a 2.1 km line-of-sight range, our system demonstrates 96.8% packet reliability and up to 15 days of uninterrupted performance per battery cycle. We believe this research contributes a significant advancement to low-power, long-range communication technologies for remote logistics, safety, and rural connectivity — areas of key interest to IJTST's readership.

We confirm that:

- This manuscript is original and has not been published or submitted elsewhere.
- All authors have read and approved the manuscript.
- We have disclosed any potential conflicts of interest (see separate statement).
- ORCID iDs and author affiliations are included in the manuscript for reference.

We sincerely thank you for considering our submission. We look forward to your response and are happy to make revisions based on reviewer feedback.

Warm regards,

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