

**REAL-TIME TRAFFIC DATA COLLECTION AND
DISSEMINATION FROM ANDROID SMARTPHONES USING
PROPORTIONAL MODEL ALGORITHM AND FREESIM
TOWARDS A PRACTICAL INTELLIGENT TRANSPORTATION
SYSTEM IN METRO MANILA**

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ABSTRACT

Research Track: (1) Information and Communications Technology (ICT)

Traffic congestion in cities results to stalling of vehicles for longer periods on the road. This leads to higher fuel consumption, time losses, and air pollution. As such, intelligent Transportation Systems (ITS) try to alleviate the economic and environmental effects of traffic congestion by influencing the demand and supply of the road network. In this study, the researchers present a practical ITS solution to the traffic concerns in Metro Manila. Popular Mid-range Android Smartphones will serve as GPS sensors in vehicles, acting as traffic probes. Client Android application software is designed to generate GPS location updates with timestamps every 10 seconds as the smartphones approach a designated roadway. No additional client hardware and wireless infrastructure are needed since the system will utilize the current cellular network in the country. Proportional model approach will use the transmitted GPS data to compute for traffic estimates. Then, Freesim, a macroscopic/microscopic simulator incorporated with Google Map, will automatically reflect and disseminate traffic status through a web browser. The tested accuracy of traffic estimates should open bigger experiments for real-time and Practical Transportation System in Metro Manila.

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