# Performance Evaluation of Signalized Urban Intersections for Non Lane-Based Heterogeneous Traffic Using Microscopic Simulation Model

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# Summary

The proposed central issue of the paper is to evaluate the current performance of signalized urban intersection for non-lane based heterogeneous traffic in Mekelle city using delay as measure of performance.

Before starting to explore field data’s it is mandatory to use existing sources interims of optimizing cost and time. It was planned transportation & planning bureau, traffic police bureau, economic affairs bureau & Municipality bureau of Mekelle city as existing sources of data.

The evidences or data required to accomplish the issue was then described like traffic operation &control, traffic characteristics, facility characteristics & reported crash data were proposed as input data throughout the research. To save time & effort data collection schedule & available data collection resources are proposed.

Since the microscopic simulation model is based on homogeneous and lane based traffic as default; using the default values for the heavily heterogeneous traffic and non lane-based traffic flow does not give sense. So to overcome this problem local calibration and validation has been proposed with the help of multi-parameter sensitive analysis and calibration using genetic algorithm. The model is then validated using unique data other than that used for calibration. The mean average percentage error is compared with simulated one, if the value is within allowable limit the model will be accepted.

Once the model is accepted then evaluation of the approaches of an intersections proceeds using delay measurement as measure of performance. Each links & connectors may be evaluated and LOS is determined using HCM -2010.

Finally, the overall scheduling plan is proposed considering the different obstacles under consideration. References in which pieces of information have been taken are written as bibliography.

Key words: heterogeneous, microscopic, simulation