



CASE STUDY

Use of Frontier Technologies to Address Road Traffic Incidents: LocalSim Philippines

LocalSim was developed by the [Department of Science and Technology - Philippine Council for Industry, Energy, and Emerging Technology Research and Development \(DOST-PCIEERD\)](#). LocalSim is a traffic simulation software designed to serve as a decision support tool for traffic management.¹ The main users are road and traffic engineers of Local Government Units (LGUs). Before the implementation of LocalSim, LGU had to rely on costly, trial-and-error type of social experiments to evaluate traffic improvement schemes. With the modelling ability of LocalSim, LGUs can reduce both financial costs and public criticism for experimenting, while producing objective, smart, and evidence-based traffic management schemes.²

LocalSim operates by replicating the road network (Figure 1). The system uses a guide map to trace odometers, the number of vehicles, the type of vehicles, and the number of lanes.³ Users can change traffic schemes with different variables and compare these schemes for all types of movements or for the average delay per vehicle per cycle. The variables, that are supported by LocalSim, include but are not limited to truck bans, exclusive truck lanes, exclusive motorcycle lanes, lane or road closures, one-way traffic, speed restrictions, U-turns, number-coding, bus stop segregation, bus loading areas, traffic signal controls, turning restrictions, grade separations, and stop/yield controls.⁴ LocalSim is also designed to explicitly replicate the local driving behaviours, such as the distance between cars, propensity to change lanes, and propensity to swerve.⁵

¹ Jackie Jane O. Aberilla, "Capturing 'Pinoy-ness' in traffic planning and management, One Expert, 23 May 2017. Available at <https://news.oneexpert.gov.ph/stii-bridge/capturing-pinoy-ness-traffic-planning-management/>

² Philippine Council for Industry, Energy, and Emerging Technology Research and Development (PCIEERD), Department of Science and Technology, "Innovations" Annual Report 2016. Available at http://pcieerd.dost.gov.ph/images/downloads/publications/PCIEERD_AR_2016.pdf

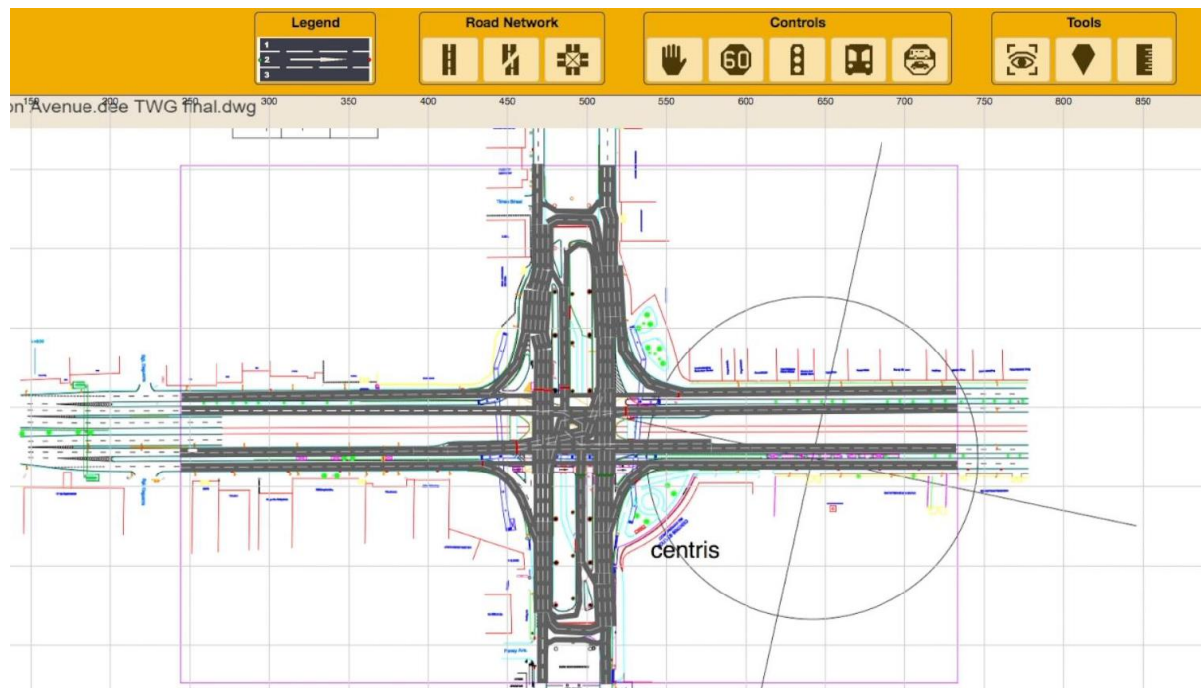
³ DOST PCIEERD, Innovation Council, "Local Traffic Simulator (LocalSim)", video, 5 September 2019. Available at <https://youtu.be/ZnBcVji7Yz0>



⁴ Ibid.

⁵ Ma. Cristina Arayata, "DOST, DILG set convergence meeting for research adaptation", Philippine News Agency, 2 July 2019. Available at <https://www.pna.gov.ph/articles/1073876>

Figure 1. Local Traffic Simulation (LocalSim) User Interface



Source: Department of Science and Technology -Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD).

Disclaimer: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Additional details and more practices like this can be found in [Geospatial Practices for Sustainable Development in Asia and the Pacific 2020: A Compendium](#)