

Urban Planning for Autonomous Vehicles

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In land-scarce Singapore, population growth and increasingly dense development are running up against limited remaining space for mobility infrastructure expansion. Autonomous Vehicles (AV) promise to relieve some of this pressure, through more efficient use of road space through platooning and intersection coordination, reducing the need for parking space, and reducing overall reliance on privately owned cars, realising Singapore's vision of a "car-lite" future.

In a collaborative research project with MIT SMART, Singapore-ETH Centre's Future Cities Laboratory (FCL), and the National University of Singapore (NUS) are evaluating the feasibility of AV policies and investigating their land and transport implications. The multi-disciplinary team, in consultation with various agencies and stakeholders, have developed urban design and AV deployment scenarios, and are testing these using two agent-based transport simulation systems, MATSim and SimMobility. Results from the simulations are then used to inform changes to urban design, creating a design – simulate – evaluate feedback loop.

In this paper, we provide an overview of the project, a review of the first year's progress and planned work for the upcoming year.