

Title: Enhanced Intersection Operations using “Intelligent” Vehicle Data

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There are currently initiatives in Canada, the USA and overseas to develop and deploy in-vehicle systems that will enable the real-time wireless exchange of data directly from vehicle to vehicle and from vehicle to roadside infrastructure. The presence of these "intelligent" vehicles within the traffic stream presents a wide range of new opportunities to dramatically improve the road transportation experience. It is envisioned that the real-time exchange of data will improve traveler safety, reduce congestion, improve travel time reliability, reduce fuel consumption and emissions, and provide more and better traveler information. These benefits will be accomplished through a wide range of applications.

This project focuses on two such applications, namely (1) the development and evaluation of an advanced traffic signal control system and (2) the provision of signal timing data to intelligent vehicles. Unlike conventional traffic signal control systems, the proposed system uses information obtained from "networked" vehicles in addition to (or instead of) data from conventional traffic sensors and also provides information to "networked" vehicles. The data available from "networked" vehicles provides a much broader set of information than is available from conventional traffic sensors and therefore enables a more sophisticated signal control algorithm to be used. At the same time, it is anticipated that using data from "networked" vehicles rather than dedicated road sensors will reduce system costs making the system more economical to deploy.

The goal of this project is to design, develop, and test traffic signal control system and in-vehicle algorithms.