

Intelligent Parking Systems for Quasi-Close Communities

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Abstract : This paper presents the experimental design and needs justifications for a localized intelligent parking system (L-IPS), ideal for quasi-close communities with increasing vehicular volume that depends on limited or constant parking facilities. For a constant supply in parking facilities, the demand for an increasing vehicular volume could lead to poor time conservation or extended travel time, traffic congestion or impeded mobility, and safety issues. Increased negative environmental and economic externalities are other associated and consequent downsides of disparities in demand and supply. This L-IPS is designed using a microcontroller, ultrasonic sensors, LED indicators, such that the current status, in terms of parking spots availability, can be known from the main entrance to the community or a parking zone on a LCD screen. As an advanced traffic management system (ATMS), the L-IPS is designed to resolve aspects of infrastructure-to-driver (I2D) communication and parking detection issues. Thus, this L-IPS can act as a timesaver for users by helping them know the availability of parking spots. Providing on-time, informed routing, to a next preference or seamless moving to berth on the available spot on a proximate facility as the case may be. Its use could also increase safety and increase mobility, and fuel savings and costs, therefore, reducing negative environmental and economic externalities due to transportation systems.

Keywords : intelligent parking systems, localized intelligent parking system, intelligent transport systems, advanced traffic management systems, infrastructure-to-drivers communication

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