Evaluation of the Efficiency of Intelligent Systems in Traffic Congestion Pricing Schemes in Urban Streets

Authors : Saeed Sayyad Hagh Shomar

Abstract : Traffic congestion pricing as one of the demand management strategies constrains expenditure to network users so that it helps reduction in traffic congestion and environment pollution like air pollution. Despite the development of congestion pricing schemes for traffic in our country, the matters of traditional toll collection, drivers' waste of time and delay in traffic are still widespread. Electronic toll collection as a part of the intelligent transportation system provides the possibility of collecting tolls without car-stop and traffic disruption. Unlike the satisfying outcomes of using intelligent systems in congestion pricing schemes, implementation costs and technological problems are the barriers in these schemes. In this research first, a variety of electronic pay toll systems and their components are introduced then their functional usage is discussed. In the following, by analyzing and comparing the barriers, limitations and advantages, the selection criteria of intelligent systems are described and the results show that the choice of the best technology depends on the various parameters which, by examining them, it is concluded that in a long-term run and by providing the necessary conditions, DSRC technology as the main system in the schemes and ANPR as a major backup system of the main one can be employed.
Keywords : congestion pricing, electronic toll collection, intelligent systems, technology, traffic
Conference Title : ICITTA 2019 : International Conference on Intelligent Transport Technologies and Applications
Conference Location : Vancouver, Canada
Conference Dates : August 07-08, 2019