Efficient Electronic Toll Collection Protocol
for Intelligent Transport System

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Abstract. Thanks to the rapid development recently in intelligent transport systems (ITS), especially in electronic toll collection (ETC), it has become easier for people to do electronic non-stop transactions at the lanes. This paper proposes an efficient electronic toll collection protocol for intelligent transport system. The proposed protocol, based on one-way hash functions and smart cards, provides mutual authentication when the user enters and exits the superhighway for toll collection. Each station in the protocol can handle many users at one time. The protocol works without the help of GPS. The proposed protocol is more efficient than any others.

Keywords: Electronic toll collection, authentication, token

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