

Abstract

In all applications which are based on Mobile Ad-Hoc Networks, node mobility has a significant impact on the performance of routing protocols; consequently affect the usefulness of these applications. This paper presents an investigation and analysis of the performance of different routing protocols (AODV, DSR and OLSR) under freeway mobility pattern in motorway surveillance system based on Ad hoc camera network as a case study. The evaluation and analysis were performed for several different performance metrics and under varying network conditions. It has been shown from the results that under various mobility speeds and different traffic loads, AODV outperforms DSR and OLSR protocols, with respect to network throughput and protocol overhead. The conclusions of this study are important to provide a qualitative assessment of the applicability of these protocols to realworld motorway surveillance systems, and also as a basis for developing new ways to improve routing performance under different freeway mobility pattern conditions.