

**UNIVERSITI TEKNOLOGI MARA**

**PERFORMANCE ANALYSIS OF AN  
AODV IN VEHICULAR AD HOC  
NETWORK**

**SAFINAH BINTI NAWAWI**

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## **ABSTRACT**

Interest in the Vehicular Ad Hoc Network (VANET) field has rapidly growth nowadays. VANET provide the infrastructure for developing new systems to enhance users' safety and comfort. In order to improve efficiency, there are many routing protocol proposed by researchers. However, due to the rapid changes in network topology the performance evaluation becomes an interested topic to be study. The study main objective of this study is to define the features of AODV routing protocol and to apply the AODV in VANET environment. The simulation is simulated using the traffic and network simulators (INET, SUMO, Veins and OMNET++). The performance was evaluated in terms of number of packet drop and throughput. The result indicates that the number of packet drop number of nodes does take effect on the performance. However, for packet drop the result will show consistent value at certain time due to the feature of AODV which is the maintenance of timer-based states in each node. Hence, the throughput performance is basically depends on total number of packet received at the destination.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

This chapter present the introductory part of the study. It begins with a review of background of the study. This is followed by a review of the problem statement, research questions and research objectives. In addition, the scope of the study is elaborated. Finally, this chapter ends with the elaboration of the key terms used in this study.

### 1.2 Background of the Study

Vehicular Ad-hoc Network (VANET) is not a new topic in the research area but it continues to provide a new problems and challenge. The VANET defined as a collection of mobile nodes that form a temporary network on variable topology which may operate without a base station and centralized administration (Barkouk Hamid, 2015). VANET also can be defined as a combination of wireless ad-hoc network and cellular technology between Vehicle to Vehicle and Vehicle to Roadside Unit (Pramod Mutalik, 2017). Figure 1.1 represents the basic of VANET.

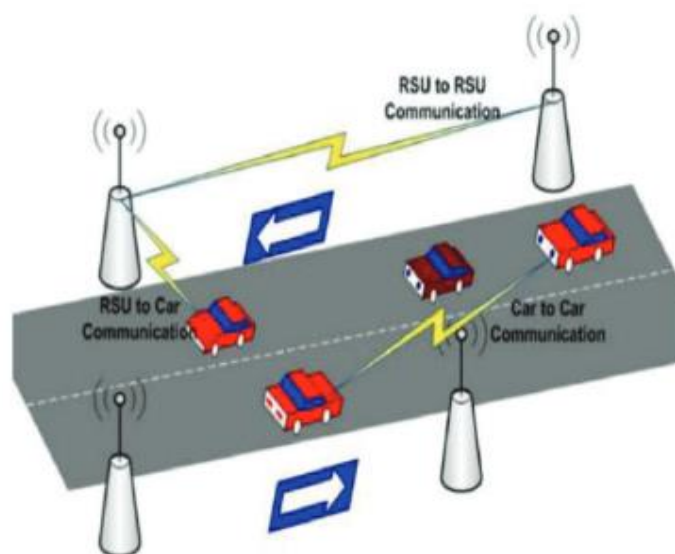


Figure 1.1 The basic of VANET (Pramod Mutalik, 2017)