

Abstract

Automatic Vehicle Classification (AVC) is the most important process of the toll collection system. It requires various hardware components installed on both sides of the lane that each vehicle has to pass through. This automatic system determines the configuration of each vehicle for the purpose of charging the appropriate toll to the customer. How to classify classes depends on user requirements. This paper presents an AVC system that is designed to fit the weather, road conditions as well as tollbooth areas in Thailand. The infrared light curtain equipment is used as the sensor device to record the physical characteristics of a vehicle, that is, the number of axles, height and length. This aggregated input is sent to our software system installed on a PC to interpret and assign a class to a vehicle. There are three possible classes: 4 wheels, 6-10 wheels, and more than 10 wheels. This system has been installed and it is being used at the tollbooths along the motor way and the east bound ring roads. The testing results have shown the accuracy of this system to be more than 90%.