

## ABSTRACTION

Along with the raising of people mobilization level, at present time, transportation is become one of primary needs to overcome distance and valuable time. In this situation, the producers of vehicles are gaining their products to fulfill the needs. And along with the easiness of having credit, cause more people are able to have their own vehicles. As a result, the volume of vehicles are raising day by day. But unfortunately the increase of vehicles volume are not supported by proper infrastructure increase. Thus the traffic jam problem are become worse day by day.

The solution to overcome the situation are with road extension or road optimazing. Road extension requires much funds, while road optimazing requires less efficient funds than road extension. But road optimizing needs a tool that could monitor the traffic volume of road. One of the tools which can be used for volume traffic monitoring is multistatic radar. Multistatic radar is radar system that separates the location of the transmitter's and the receiver's at different places. This passive radar system operates with electromagnetic wave radiation, which is transmitted continually by the transmitter; then those transmitted signals are reflected by objects and received by the receiver. Those reflected signals, which are received by the receiver, are signals that have changed in frequency, amplitude and phase as a result of objects radial velocity and motion direction relative to the transmitter, and position of the objects relative to transmitter and receiver as well. In the end, those alterations information is used for estimating the type, velocity, and motion direction of objects.

According to the result of simulation analysis, it can be concluded that each received signals which are received by the receiver have their own characteristic in frequency, amplitude, and phase due to the condition of the channel where the condition of the channel are depend on the type and motion of each objects. The accuracy of the modeled system in receiving the reflected signals is 37.5%, while the maximum oscillator instability requirement is 80 Hz