

Model Siklus Waktu Lampu Lalu Lintas Cerdas Menggunakan Fuzzy Mamdani

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Abstract	<p>The growth of motorized vehicles in Indonesia has increased significantly. According to data from the Central Bureau of Statistics, the number of motorized vehicles in Indonesia has increased by around 10% each year in the last five years. One of the negative impacts of the increasing number of motorized vehicles is traffic congestion. Traffic congestion has become a serious problem in several cities in Indonesia. One of the causes is the increase in the number of vehicles at road intersections, which has an impact on congestion and the safety of road users. The rapid growth in the number of vehicles requires a more comprehensive strategy to reduce congestion and accidents at road intersections. Therefore, the need for Intelligent Transportation System, especially on the time-cycle configuration of intelligent red light is very important. This research aims to model the time-cycle of the red light using the Mamdani Fuzzy Inference System to simulate the green light time configuration so as to reduce the waiting time of road users at highway intersections. The simulation results show that the time-cycle configuration and green light time length of the Mamdani Fuzzy calculation are more varied relative to the number of vehicles. The values are relatively smaller than 6 to 54 seconds from the time configuration set by the local Department of Transportation. This shows a time efficiency for road users of up to 27%, which means that road users can complete trips 6 to 13 seconds faster.</p>
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Author	Dr Ir MULKI INDANA ZULFA, S.T, M.T