

Electronic Toll Collection (ETC) for Freeways's Toll Gate

In Indonesia, especially in Jakarta, Traffic jam becoming a common thing. Indonesia's government has figured many ways to solve the problem. One of the solution is building highway across the city. But on reality, traffic also occurs on the highway. One of the many reason there's a traffic jam occurs on the highway is the accumulation of cars in front of the toll gate that stopped for paying the toll. In Indonesia, the pay toll system on road is still using the traditional method which is collecting the toll by road barriers that installed at the freeways. The drivers for each car must stopped at the gate and permitted to pass the barrier after they pay the money or the ticket. Although in this system the toll is collecting directly from the drivers , But the existence of barriers and the must of each vehicle to stop, could cause a traffic jam if the numbers of toll gate and the number of cars didn't match, and it usually happens on morning and the afternoon.

On Developed Country, they already applied the Electronic Toll Collection (ETC). ETC is an adaptation of military "Identification friend or foe" technology, aims to eliminate the delay on toll roads by collecting tolls electronically. (taken from en.wikipedia.org/wiki/Electronic_toll_collection)

ETC Consist of three Systems . The Automatic Identification Vehicle (AVI), Automatic Vehicle Characterization (AVC) and Vehicle Enforcement System (VES). for AVI, on each barrier gate installed a receiver that can communicate with a tag that installed in the rear windshield of each cars. AVC is responsible for vehicle classifications, so the number of tolls is depending on the vehicle weight and Size and VES is a sytem that can identify the vehicle that didn't have an authorized tags or having insufficient balance when they entering the toll gate.

The ETC Sytem believed can reduce traffic on the highway because the system can reduce the stopping time of each vehicle when they pay the toll and also reduce the accumulation of another vehicle that queue in the back of the stopping car. Not only that, it can also influence on fuel saving and reducing the air pollution on each highway's toll gate. For security measures, the ETC system also had benefit because of the VES system, it can identifies the vehicle number and drivers so it can help police for searching stolen cars or another criminal activities that involved a car when they pass the highway toll's gate. Another fringe benefit are the reducing of staff that work on each highway gate.

In Indonesia, maybe implementing this system still cause a huge problem. Especially on reducing the number of staff that worked on the highway gate and the cost to implement the system. Nevertheless, this system can solve one of the traffic problems that occurs in Highway. If there's much more people that using the highway, the number of vehicle on roads outside the vehicle will reduced and the traffic jam on Jakarta's roads hopefully, also reducing.