

# **IMPLEMENTATION OF DYNAMIC CLUSTER USING K-MEANS CLUSTER AND PARTICLE SWARM OPTIMIZATION FOR TRAFFIC CHARACTERISTICS IDENTIFICATION CHARACTERISTICS BASED ON THE NUMBER AND THE KIND OF VEHICLES**

**Student's Name** : Tsabbit Aqdami Mulhtar  
**Student's ID** : 5110 100 227  
**Department** : Informatics Engineering, FTIF-ITS  
**First Advisor** : Prof.Dr.Ir. Joko Lianto Buliali, M.Sc.  
**Second Advisor** : Diana Purwitasari , S.Kom, M.Sc.

## **Abstract**

*The Roadways are the most of public facilities is used by people in their activities. It is because the roadway's function that connect one place to another places. Every roadway has its own capacity and the differences of compartmentation based on its vehicles.*

*Although K-Means Cluster can be used for grouping method, but it doesn't enough for this problem because it needs a spesific number of Clusters. This final pfoject implements new method in Dynamic Cluster using K-Means an d Particle Swarm Optimization for optimal solution in Cluster problem. Particle Swarm Optimization's algorithm is used to find the number of Clusters with which the K-Means is used to find the best Cluster result.*

*Experimental evaluation is done by testing the parameter values in Particle Swarm Optimization and some scenarios problem about the condition of roadways. Experimental is divided based on the two kind of vehicles, motorcyle and car in some ranges of the time. The result of Experimental that have been*

*done is in every Cluster in the subscenario has the different member of roadways that depends of the time.*

***Keywords: K-Means Cluster, Dynamic Cluster, Particle Swarm Optimization.***

