

## **ABSTRACT**

*PT KLM is one of the partners of PT PERTAMINA who conducts activities in the form of distribution of fuel of Solar HSD (Head Speed Diesel) from depot owned by PT PERTAMINA to be distributed to PLTD. Based on data in July-December 2016 owned by PT KLM that there is a problem, where the occurrence of delay in the delivery of fuel oil causing the expense of pinalty expenses. The cause of delay is the time travel and distance is not efficient because there is no schedule of the appropriate distribution routes.*

*In distributing fuel oil, PT KLM has a fleet of 9 tankers with 2 variants of capacity. So, this problem can be solved by using Vehicle Routing Problem (VRP) approach with characteristics of time window, multiple trip, split delivery, and heterogenous fleet. On these characteristics indicate that the problem of VRP faced by PT KLM is quite complex, so it must be solved with a metaheuristic approach in the form of Tabu Search Algorithm, with the initial solution of Nearest Neighbor Algorithm.*

*The result of the algorithm calculation can reduce the mileage and time travel by 9,4%, minimize the delay, decrease the total shipping operational cost up to 16,27%, and decrease the number of vehicles used by 12,5%.*

**Key Words :** *Vehicle Routing Problem (VRP), Time Window, Heterogeneous Fleet, Multiple Trip, Split Delivery, Nearest Neighbor Algorithm, Tabu Search Algorithm.*