

ABSTRACT

Distribution process is the process of moving goods (or human) from a point to another point. One of the company engaged in the field of distribution is PT.XYZ. In the process of distributing goods, is required a system that can manage distribution route that the process of distributing can more optimal and fulfillment of all request distribution. One way to optimize distribution process is the determination of the distribution of good and minimize number of vehicles. PT.XYZ does not have a system were able to determine distribution route. This resulted in the cost of distribution process can not controlled and not guaranteed of demand fulfillment distribution.

One solution to optimize distribution route is by using Dial-a-ride Transportation with Time Windows. In Dial-a-ride Transportation (DART), the fleet did not return to depot after completion of the unloading, but go to the next client for the next distributing route. This can minimize transportation cost and minimize number of vehicles. Vehicles that are not used, can use to another client for distribute the goods.

The result of Dial-a-ride Transportation with Time Windows is the occurrence of efficiency BBM cost around 16.11% from Rp. 3.016.071,- to Rp. 2.530.179,- and occur efficiency total mileage around 15.53% from 4016Km to 3392 Km. Amount of vehicle that use to distributing goods reduce from 20 to 10, so that it can be used to distribute goods to other customers.

Key Word : Distribution, Dial-a-ride Transportation with Time Windows, Genetic Algorithms.