ABSTRACT

Maintenance Service Center (MSC) is a division that has a duty to carry out repairs and maintenance of operating equipment owned by PT. Telkom and other partners. The workflow in the repair of damaged goods is the customer bring the damaged goods and the MSC should immediately replace the damaged item first with MSC belongings and then repair the damaged item was. One of the problems faced by the MSC is the possibility that the lack of a stock of goods held to replace faulty goods.

Prediction system made the order number 3030566 module is made to be used as one consideration in meeting the inventory number. In this thesis, the prediction made by using artificial neural networks in which the weights of neural networks are obtained in two ways: through porses learning using backpropagation algorithm, and using the evolutionary strategies. The results of the training by using the algorithms are compared to determine which one is optimal in making predictions.

After going through the process of learning and testing for each algorithm found that the algorithm ES better at optimizing the weights of artificial neural network to predict the order module 3030566. Altought algorithm ES better than algorithms backpropagation, however, the algorithm is also not able to produce predictions that have little value within the limits of error desired. That is because the pattern of the data is very complex orders that the resulting error is greater.

Keywords: *MSC, artificial neural network, ANN, Evolutionary Strategies, ES, prediction, time series*