Abstract

Semarang Container Terminal situated at a port provides services of processing loading and unloading containers from Central Java and DIY district, but it does not handle metered cargo. The container flows transshipped at Semarang Container Terminal from year to year has been increasing to 356,700 Teus in 2009, to 384,900 Teus in 2010, to 427,700 Teus in 2011, to 457,055 Teus in 2012. The increase of the container flow creates the transport vehicle traffic congestions at each container yard. To solve the facing challenges require optimal container handling facilities to be developed. Promotion of cargo handling facilities at each container yard and trucks improves the capacity of handling to respond to the increase of container flow. Simulation method is used to predict the need for the handling facilities. The simulation performed should be verified and validated previously in accordance with the real operation.

This research project using the simulation method gets the necessary handling facilities and trucks with the enhance of container flow volume at 115%, 130% and 150%. According to the prediction using the simulation method, as for handling facilities, 115% increase needs 7 rubber tyred gantry for the container yard 1, 1 side loader for the container yard 2, 1 rubber tyred gantry for the container yard 6, 3 reach stacker for the container yard 3 and
4. 130% increase needs 8 rubber tyred gantry for the container yard 1, 1 side loader for the container yard 2, 1 rubber tyred gantry for the container yard 6, 4 reach stacker for the container yard 3 and 4. 150% increase needs 9 rubber tyred gantry for the container yard 1, 1 side loader for the container yard 2, 1 rubber tyred gantry for the container yard 6, 5 reach stacker for the container yard 3 and 4.

Keyword: loading and unloading service; unloading rate; simulation.