ABSTRACT

This final project discusses the job scheduling on one kind of machine in PT. Dirgantara Indonesia*. This is one of the major operating machines in the production process which is included as machining center engine type,* Toshiba 80.5 *machines. Machining center runs automatically by the Numerical Control program which has two palettes that work alternately. It meant by if one pallet is doing job process in one machine, another pallet in the machine is used for the other one. The products that are processed on these machines are varied and have been used in certain modules, i.e., fixture and cutting tool. Then problem arises when the use of both palettes is less effective because there is only one pallet can be actively used and limited features. Therefore, optimal job scheduling on both pallets with regards to the use of different fixture modules is needed.*

A heuristic approach has been chosen to solve this problem by minimizing the objective function such as 'makespan'. Priority rules are used for initialization in Genetic Algorithms chromosomes that consisted of four scenarios. In providing solutions with the best fitness value using crossover and mutation. Based on the fitness results obtained 'makespan' reduction in each of these scenarios, the first scenario is 6.87%, the second scenario is 6.98%, the third scenario is 8.22% and the fourth scenario is 7.79% .

Key words: production scheduling, Makespan, Machining Center and Genetic Algorithms