

ABSTRACT

This study discusses the comparative of value from production makespane for Airbus A320 DNOSE component at PT DIRGANATARA INDONESIA. Makespane itself is a total amount of production result represented with hours and generated from job sequence production. In this study, the existing job sequence production are reconstructed using genetic algorithm method. The it proven to reduce makespane.

The result shows that genetic algorithm improve the efficiency of companies time to produce DNOSE. These improvement reducing operator and machine workload therefore it can be diverted other program. The solution are capable to result optimum producing more than 50% in average. 5 times of test resulting the best makespane at 259,341 hours while existing result at 578,48 hours. It increase companies efficiency until 55,17%.

In designing an improved analysis, previously should performed rescheduling of existing production sequence using genetic algorithm. This improvement based from the company-owned part number production provisions. 8 component must be produced first ie 2 RIB AT STN, 2 RIB and 4 DOOR F-S ROOT as a main framework and latter fitted with 48 others. The improvement of process sequences start from doing random calculation from prior existing process sequence using 20 samples. Then continued elitism for 10 best fitness value, 6 for crossover and rest for mutation. The process looped until 50th iteration where the resulting fitness value becomes constant. An improvement analysis based on the largest fitness value which has the lowest total makespane. Then these results compared with existing data to obtain sequence production percentage.

Keywords: Flexible manufacturing system, genetic algorithm, scheduling, makespane, job sequence.