

ABSTRACT

Production facility layout is a very important thing in a manufacturing factory because there is a correlation between facility layout and material handling. PT Mitra Rekatama mandiri is one of the metal foundry companies (job shop) having process layout resulting the distance and high cost of material handling for one product.

The problem of the distance and cost of high material handling can be solved by Cellular Manufacturing System (CMS) which constitutes application of Group Technology (GT) having a goal that can decrease distance and the cost of material handling. This research used heuristic algorithm which uses some methods i.e. Single Linkage Clustering (SLC), Complete Linkage Clustering (CLC), Average Linkage Clustering (ALC), Bond Energy Algorithm (BEA), Rank Order Clustering I (ROC I), and Rank Order Clustering II (ROC II).

The result of the research shows that the best method is Bond Energy Algorithm (BEA). The result which decreases 171,36 meters for the distance and Rp.22.444,05 for the cost.

Keywords : *group technology, cellular manufacturing system, heuristic algorithm, layout, material handling.*