ABSTRACT

In the manufacturing industry, the design of efficient facility *layout*s is an important factor in increasing productivity, reducing production costs, and improving product quality. PT Mobilkom Telekomindo is a company engaged in radio trunking communication, Scada, and the provision of conventional radios in the form of VHF and UHF. The company manufactures all the products they provide to their customers. The company is currently working on a project to procure radio panel boxes from PT Pelindo. These radio panel boxes serve as the place where the radio is placed for communication between the crane operator and the field operator.

This research aims to determine the condition of the existing *layout*, which still has workstations located far apart in the radio panel box assembly process, and to design a proposed *layout* to reduce assembly time. In this research, the method used is the BLOCPLAN algorithm as a framework for designing the radio panel box assembly *layout*.

Based on the analysis using the BLOCPLAN algorithm, a recommended radio panel box assembly facility *layout* for PT Mobilkom Telekomindo was produced. In the existing facility *layout*, the total material movement distance was 293.5 meters. After redesigning the facility *layout* using the BLOCPLAN algorithm, the new material movement distance was 169 meters, a reduction of 124.5 meters or 42.4%. This distance reduction also affected the material transfer time, from the *initial* 627.24 seconds or 10 minutes 27 seconds to 363.92 seconds or only 6 minutes 3 seconds, a reduction of 263.32 seconds or 58.02%.

This distance reduction can occur because the proposed *layout* obtained from BLOCPLAN places the workstations based on their dependency relationships with other workstations. By doing this, the workstations in the proposed *layout* will be located closer together and facilitate the material flow process in the radio panel box assembly. The placement of the workstations is designed to improve material flow efficiency and minimize movement between stations.

Keywords – *Assembly, Layout, BLOCPLAN*