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Plant Layout Analysis by Computer Simulation for Electronic Manufacturing Service Plant

Authors : D. Visuwan, B. Phruksaphanrat

Abstract : In this research, computer simulation is used for Electronic Manufacturing Service (EMS) plant layout analysis. The current layout of this manufacturing plant is a process layout, which is not suitable due to the nature of an EMS that has high-volume and high-variety environment. Moreover, quick response and high flexibility are also needed. Then, cellular manufacturing layout design was determined for the selected group of products. Systematic layout planning (SLP) was used to analyse and design the possible cellular layouts for the factory. The cellular layout was selected based on the main criteria of the plant. Computer simulation was used to analyse and compare the performance of the proposed cellular layout and the current layout. It is found that the proposed cellular layout can generate better performances than the current layout. In this research, computer simulation is used for Electronic Manufacturing Service (EMS) plant layout analysis. The current layout of this manufacturing plant is a process layout, which is not suitable due to the nature of an EMS that has high-volume and high-variety environment. Moreover, quick response and high flexibility are also needed. Then, cellular manufacturing layout design was determined for the selected group of products. Systematic layout planning (SLP) was used to analyse and design the possible cellular layouts for the factory. The cellular layout was selected based on the main criteria of the plant. Computer simulation was used to analyse and compare the performance of the proposed cellular layout and the current layout. It found that the proposed cellular layout can generate better performances than the current layout.

Keywords : layout, electronic manufacturing service plant, computer simulation, cellular manufacturing system
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