

Simulation of a manufacturing assembly line based on WITNESS

Abstract:

Nowadays, simulation models have been used to evaluate various aspects of manufacturing systems. This paper introduces a manufacturing assembly line of starter production as a case study and the basic application of the WITNESS software. Adequate modeling but inadequate software experimentation may lead to poor decisions and can be detrimental, particularly when financial investment is involved. The objective of the study is to escalate the productivity and efficiency of the line by using precise simulation. This paper has been divided into three parts. At first, by analyzing the results of the model, the bottlenecks of the production system and the causes of the problems were identified. Second, the results of the model were identified and validated. Finally, some modifications in the model structure to improve the assembly line were set, so it would minimize the inventory of products and improve the total output.