

Optimization Models for the Scheduling in New Product Development

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This paper presents the model for the scheduling in the new product development process of the Printed Circuit board company where n type of PCBs, or simply n boards, are to be processed by m different parallel machines. In this processes, a lot of tasks involved in producing products are regulatory requirements and have a set of technological precedence constraints that must be satisfied. A general objective is to minimize the total makespan, the scheduling problem is complex and is usually dealt in stages, which may not yield a good solution. We model the problem in an integrated manner using weighted multiple objectives to deal with grouping of the boards, load balancing, board sequencing and component switching at a machine. The application of the model is illustrated with Printed Circuit board company's problem using GAMS.