Niti Kittisatien 2007: Development of A Stochastic Simulation Software for Studying Factors That Contribute to Variation in a Hard Drive Production Process. Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering, Department of Industrial Engineering. Thesis Advisor: Assistant Professor Juta Pichitlamken, Ph.D. 63 pages.

Improving quality in hard disk drive supply chain, each of manufacturing factories has to commit their product variation on critical parameter. The company need tool that can do the Tolerance Analysis in order to reduce variation on their product. Our goal is to develop a tolerance analysis tool that can determine what factors significantly contribute to the variation of product and predict the tolerance of product with setting condition. We build our model in Excel sheet and simulate on Crystal Ball simulation programming. Visual Basic for Application is an interface between them. We develop a model with stochastic tolerance of assembly part and process factors. Our model focuses on two critical parameters which are Head pitch and Spring force. For more accuracy model, we have to explore new input factor that impact on critical parameters. Appling measurement system is also including in this study. The results show that the highest variation in their product is incoming part. The results for other key performance indicators are shown inside of the paper.

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