

## **ABSTRACT**

*Layout and Facility Design Laboratory at Faculty of Industrial Engineering, has some learning media such as module of practicum and multimedia supporting device. however, the learning media such as simulation tool or model are not yet available in this laboratory. Therefore, the need for simulation tools to assist the teaching and learning process in Layout and Facility Design Laboratory work using product architecture design with model of Contact and Channel Model (C & CM).*

*The development of product architecture is a key phase in the process of product design and development. To assist in the analysis of product architecture, this study uses approach model of Contact and Channel Model (C&CM). C&CM is a basic design model developed by the Institute of Product Development (IPEK). This study also assisted by an analysis of product decomposition integration that provides an analysis of groupings based on the type of individual interaction as a reference for the design of product architecture improvements.*

*The results of this product architecture design analysis resulted in cluster form, layout geometry, and interaction between elements. The initial concept of the simulation tool has four chunks, after the clustering analysis produces seven chunks such as electrical, rotary energy transfer, upper conveyor, lower conveyor, material handling, workstation and counter. Based on the analysis of contact and channel model, it is known that there are layout geometry and dependency matrix which is aimed to know the location of the basic physical component of the product and the interface relationship of the component. The integration analysis of the product decomposition known there is interaction between the elements by identifying the type and value in each interaction between elements.*

*Keywords: Product Architecture, Contact and Channel Model, and Product Decomposition*