ABSTRACT

In the era of globalization, the development of technology continues to evolve at a rapid pace, one of which is the development of automation. Automatic Storage And Retrieval System (AS/RS) is one application of automation systems in warehousing. Automation profession that is in the shade of the Faculty of Industrial Engineering has a function to improve the skills of students in the field of industrial automation, especially with regard to the design automation of manufacturing systems that stand alone or integrated. by function, it can be said about the learning model AS / RS according applied in one of the studies contained in this profession. For that needed a learning simulation that can be used as a simulator AS / RS in this profession. Simulation design AS / RS begins with the process of identifying goods using image processing to identify product based on colour.

This study began with the identification phase, initialization phase, creative phase, implementation and testing phases and stages of the conclusions and suggestions. System design process begins with design scenarios, and design a system that consists of designing simulation workstation sorting by color, design of image processing programs using MATLAB®, the design of PLC program with TIA (totally Integrated Automation) Portal V12, and the design of human machine interface (HMI) with Wonderware Intouch and the design of the communication between the HMI image processing program by using a comma separated Value(CSV) database.

Designed system will then be tested using a simulator based on test scenarios that have been designed for the system that is made to run in accordance with the purpose of research, the results of experiments performed successfully system designed sorting items by color.

Keywords : Automation, AS/RS, Image Processing