ABSTRACT

The needs of industrial machine in Indonesia has been increasing based on industrial development that has been increasing too in Indonesia. The Industry really needs machines that can help them through the production process so they can be a competent industry. Somekind of indutry producting a different kind color of package for one kind product. So it needs a machine that can clarify the product based on the packaging.

This final project will build a prototype for a industrial machine that can clarify the product based on the color of its package. So it can separating product accurately. Camera (webcam) is using as an input to detect the position (coordinate) and the color of the object. PC will process the coordinate and the color so it can send the result to the Arduino Mega 2560. Arduino Mega 2560 is using as main controller to control the plant after it receive an output from the PC that processing the coordinate and color.

As a result, this prototype have 78 times succeed and 22 times error from 100 attempts. The accuration of this machine is affected by the buffer that Arduino Mega 2560 received from PC. The accuration of color detection is affected by the light intensity in that room. Color calibration-HSV adjustment is the key to solve the different light intensity in different area. For this prototype's HSV needs light intensity between 5.0 lumen/m^2 and 21.0 lumen/m^2 . Each color has their own HSV.

Keywords : *Input, output, Arduino Mega 2560, PC, HSV, main-controller, buffer*