

ABSTRACT

Indonesia's textile industry has been successfully being the fifth ranked textile product exporter country by contributed Gross Domestic Bruto (GDP) which is 9% in non-oil industry. As the rapid development of technology, its encouraging textile industry to be able to implement it into the production process, its automation system regarding can improve the productivity. PT. Buana Intan Gemilang is one of textile industry which manufactures greige, sajadah, and curtains fabric within various pattern. Increasing demand regarding pattern therefore company should intensify productivity of machine, operator, and system in order to produce pattern card called jacquard card in thousand amounts. The Problem statement which showed is the manufacturing process is still manual rely on recur the operator's activities, inconsistent cycle time that occurs on incapacity production target. Automation system design on punching machine using a Programmable Logic Controller (PLC) as the primary controller with using User Requirement Spesification (URS) for providing the solution in designing automated system implemented to solve the problem. According to conducted research it can be conclude that, automation system design for jacquard on punching machine at PT. Buana Intan Gemilang has been accomplished and can reduce by cycle time around 10 seconds/card. By using automation system on jacquard card production is expected to increase the production capacity and eliminate the workload of operator therefore offer benefit and productivity of company.

Keywords: Textile Industry, Automation, Productivity, Jacquard Card, Programmable Logic Controller, PLC Programming, User Requirement Spesification, Cycle Time.