

## **ABSTRACT**

*The continued development of technology today, pushing various industries to utilize these technologies to meet market demands, one of which is the automation technology. Application of automation can increase productivity levels, creating process control and monitoring of the plant operators in realtime and creates data processing is independent. Distribution of data in the system automation information can be done using cable (wireline) or wireless (wireless). In general, in the industrialized world, still use the cable as a media liaison between the plant operator. Using a cable network is expensive in terms of the complexity of installation and maintenance, lower levels of flexibility will be the expansion of the company and still have not been able to achieve satisfactory performance. Wireless network is one of the solutions in the manufacturing industry today. Wireless networks can help the industry to collect more data from the process, predict when equipment maintenance is done, increase labor efficiency through plant-wide network connectivity and provide low-cost connectivity solutions.*

*LAN-based automation systems using Programmable Logic Controller (PLC) can be applied in many fields, one of them in the processing of tea. In the processing of PT. ABC, still requires the operator to the machine - the machine used, giving rise to the possibility of human error and the achievement of production has not been able to fulfill the work plan and budget production (CBP) is based on existing demand. It is necessary to control the machine in the processing of tea, especially the milling process so that a more optimal use of the machine in terms of capacity and control of the machine if an error occurs, the process of monitoring and controlling temperature affects the quality of tea produced and the presence of the recording of the data in the plant.*

*Wireless-based system design automation using Programmable Logic Controller (PLC) which is implemented in the milling process the tea is done by the proposal process scenarios. In designing the system, testing is done by building a plant simulator to make the system work in an integrated automation and wireless based. The design of data communications in a wireless-based PLC can be used for process control that is flexible in terms of PLC programming and monitoring with long distances and does not allow for wiring.*

*Keywords: Automation, Networking, Programmable Logic Controller, PLC Communications, Wireless, Siemens S7-1200.*