

ABSTRACT

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Title : Packaging System based on QR Code using Machine Vision
Technology based on PLC and Raspberry Pi

Automation systems have been widely applied in the industrial and manufacturing world, one of which is in the packing process. The purpose of this research is to design and build an automation system in the packing process by utilizing Machine Vision technology and testing the success of the QR Code decoding process. The packing process is carried out based on the QR Code using the decoding method. QR Code is used to identify the type and number of objects that must be put into the package. Scanning or scanning QR Code using Taffware US829 webcame and decoding process using Raspberry Pi. The results of the decoding process are sent to the PLC to continue the packing process. The packaged objects are cuboid and tube-shaped objects with three packaging variations, namely cube-cube, tube-tube, and tube-cube. The results of this study are the QR Code decoding process can work optimally starting in conditions of a minimum lighting intensity of 50 lux, a webcame capture angle in the range of 60° to 120° against the QR Code, a webcam distance of at least 2 cm to the QR Code, a minimum print size of 2 cm x 2 cm, and the QR Code condition is not damaged by more than 15%.The decoding process is done accurately with detection time of 103.23 ms and the process of filling objects into the packaging is done precisely with 100% accuracy for three packaging variations.

Keywords: *Decoding, Machine Vision, Packing, QR Code.*