ABSTRACT

Efficiency time in quality inspection process is very important.especially for rectangularity identification process. Manual inspection which is done manually by human operator use amount of time. In existing condition, it consume time until 104 seconds for one ceramic tile sample It will make operator more difficult if the sample size has a big number. This difficulties can be decreased by using digital image processing which is based automation system to do inspection process, especially for rectangularity identification process as an improvement. Digital image processing will calculate the rectangularity deviation with Harris Corner Detection Method that integrated with PLC and HMI (Human Machine Interface) to make the process more faster. Harris corner detection method will identify the whole corners on ceramic tile sample image and calculate the deviation. The work priciple of improvement start from put the the ceramic tile on a conveyor with a palette, then the sample will trigger sensors and a webcam camera will capture the sample image and process it with MATLAB and the whole process is controlled by PLC (Programmable Logic Controller) and visualize it on HMI (Human Machine Interface). The whole process of improvement system consume about 38 seconds and make an efficiency in time about 62.68%.

Keywords : Automation , Harris Corner, Digital Image Processing, Ceramic tile rectangullarity