Development of an Automated Defect Identification System based on the Apparel count in Apparel Cartons

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In apparel industry garment cartons are considered to be having defect if there is a mismatch between the actual and the default garment count. Therefore, this kind of defect identification is an essential part for the quality assurance system in apparel industry for maintaining high product quality to ensure customer satisfaction. In many local apparel industries this defect identification process is carried out manually and due to this manual process subsequent human errors may happen degrading the product quality. In order to minimize the human intervention and to improve the accuracy in defect identification novel automated low-cost defect identification system is introduced using RFID technology. First, the system will identify the apparel carton when it is placed at the docking of the system. Then the carton will be gripped using a specially designed robotic gripper and will be transferred to the inspection area. In the inspection area, RFID tags attached to the garments will be scanned to get count of the garment in the cartons and the count will be compared with the default count. If there is a mismatch between the actual and default count, the carton will be rejected by the system. The developed defect identification system improves Accuracy, Efficiency, and repeatability. Therefore, defect identification manual process can be replaced by the developed low-cost method successfully.

Keywords: Automated Defect identifications, RFID, Apparel Industry, Quality Assurance