ABSTRACT

IMPLEMENTATION OF DIGITAL IMAGE PROCESSING FOR ESTIMATING THE DIMENSION OF A LUGGAGE ON SMART LOCKERS PROTOTYPE

Safe deposit boxes are typically located in railway station and airport, commonly called the lockers in general are still using manpower. This final project aims to create a prototype Smart Lockers, which can automatically store the goods to fit locker appropriate size. Digital image processing is used to predict the suitability of these sizes. Overall Smart Lockers prototype consists of three parts: the receipt, storage section, and pickup part. In this thesis, discussed only receipt part of goods. At the reception, a digital image processing is implemented to predict the dimensions (length x width) of goods to be deposited and a conveyor is used as a vehicle to move goods from point of receipt to the lockers provided.

On Digital Image Processing system at the reception, a web camera is used to detect the form of an object, then the results will initiate the process of Digital Image Processing to predict the dimensions of the goods. In addition, ultrasonic sensors are used to help get the distance value from the camera to the object.Goods dimensions will be classified into size S (small), M (medium), and L (large) in accordance with the classification of plot size lockers available. Classification of Digital Image Processing system output will then be compared with the data availability swath from the storage locker.

Digital image processing can be implemented to predict the dimensions of a good, with an average percentage of measurement error small enough that is 7.7%. But there are limitations in this method such as can not detect objects that have bright colors and white colors.

Keywords: Automation, Prototype Smart Lockers, Digital Image Processing, Conveyor.