ABSTRACT

Automation system that can facilitate and assist the work has been used in all kinds of aspects of human life. These ease and convenience which is being attempted by making this system as one of the facilities in tourism field. Indonesia is rich in culture and natural resources has attracted many foreign tourists to come to Indonesia. The system was created to make it easier for foreign travelers to exchange their foreign currency to rupiah currency. With this ease, it is expected that a growing number of foreign tourists coming to Indonesia could increase the income of the local people, local revenues and state revenues.

The system is made using digital image processing theory. System would capture the picture of the money then system will recognize the money by pre-processing, feature extraction, and classification processes so that the system could identify the nominal and the nation. The system use GLCM dan PCA as feature extraction and SVM as classification method. System would download kurs from Bank Indonesia webpage by internet connection. The design of system is created in MATLAB R2011b. This research creates the applications only, as a brain of the system.

The performance of system is measured by the accuracy. The best accuracy from the system is 96% from 100 testing data and 20 training data when using PCA feature extraction methode with 20 PC and SVM OAO classification method with C=5 and kernel linear at offline condition. In online or realtime condition, the best accuracy achieved is 77,61% in the place with adequate light intensity with 200 test data and 20 training data. This means that the identification of foreign money system using SVM classification methode, could work well.

Keywords: foreign currency, Support Vector Machine, currency, rupiah