ABSTRACT

The various problems for user of coffe machine are the dosage is not appropriate and the mean process time is random and the machines operational are generally still needs operators hand. Automatic coffee machines were created to make it easier for someone to mix the coffee. With these machine, it can minimize the time of the coffee mixing process and eliminate the subjectivity of the taste in coffee because the dosage of the ingredients has been set according to predetermined standards. Automatic coffee machines can also reduce cafe operating costs and can be developed independently. In its development, a transfer function system is needed that can imitate coffee compounding which is generally done by handmade.

To meet these objectives, the system applied the finite state machine (FSM) method. This method was chosen because of its simple and easy to implement. The application of this method also makes it easier when you want to take or add coffee variants to the machine. the cup distribution flow in the storage and compounding phases is controlled by State conditional that imitate the handmade coffee compounding steps. The actuators use combination of series of conveyor and a robotic arm to control the position of the cup during the compounding phase. The cup distribution system uses a feedback system to ensure that the position of the cupremains precise in the process.

The system which already built has a success rate of 98.62% in coffee compounding process, this influenced by the accuracy of the sensor which read the position of the cup and the actuator which drive the position of the cup. The distribution system that has been designed has an average compounding time speed of ± 32 seconds per cup.

Keyword: Coffee machine, position, distribution of coffee cup, finite state machine