

ABSTRACT

MSMEs have a strategic role in national economic development, apart from playing a role in economic growth and employment. Therefore, usually every MSME owner gets an order via an e-commerce platform, usually sent via courier. However, the MSMEs often have to wait for the courier who wants to pick up the goods and the courier often does not provide a definite pick-up schedule. So when the MSMEs are not at the location, the courier comes to the place to pick up the goods they want to pick up. Smart Pick up Box is an innovative solution that uses Internet of Things (IoT) devices to optimize the process of picking up goods from MSMEs (Micro, Small and Medium Enterprises) by couriers. This system uses the ESP32 CAM module, a microcontroller device that is integrated with a camera, to make it easier for the courier when they want to pick up the goods. This system consists of an Ultrasonic Sensor, Accelerometer Sensor, Buzzer, LCD, DC Converter, Buzzer which are installed inside ESP 32 microcontroller which will be connected to the ESP 32 cam, where the information data received will then be forwarded to the Telegram bot. And in the process of opening the drawer, the Telegram bot will send The command that has been created will be sent to the ESP32cam. If the command is valid, it will be forwarded to the ESP 32 and the solenoid connected to the ESP 32 will respond to the command. In this research, the average delivery delay of the ultrasonic and ESP 32 cam sensors responding to the detected data and capturing the image was 11.35 seconds, the average distance sensor test was 7.07%, drawer opening delay was 2.61 seconds, drawer 2 0.52 seconds and on drawer 3 2.41 seconds.

Keywords: *MSME, Courier, Microcontroller, Telegram, Efficiency, Organized, Esp 32 cam*