

ABSTRACT

Along with the development of technology, there have been many human creations that can help human work. Robot is one of the human creations that is very helpful in both light and heavy work. In fact, gradually human resources will be replaced by robots. However, there are several job sectors that urgently need robots, for example car body transport and sea welding. To do this, we need a robot that can be controlled closely or remotely. From this came teleoperation. Teleoperation allows control over very long distances, but this teleoperation process still requires manual control, not fully automatic.

In this final project research, the design and implementation of a teleoperation system on a double manipulator arm is carried out. There is a part of the arm that is responsible for sending commands (transmitter) and an arm that will move according to the controller's command (receiver). By using the help of a Virtual Private Network (VPN), teleoperation can be carried out in various countries.

The output of this research is a system that can carry out teleoperation in 3 countries, namely Singapore, America, and Germany, with Singapore being the country with the fastest data delivery and America being the country with the slowest data delivery. And the accuracy of the gripper for gripping and moving items was 66.6%.

Keywords: *Teleoperation, Virtual private network, Arm Manipulator*