ABSTRACT

Language is the way humans communicate with one another, language itself consists of 2 kinds, namely verbal and non-verbal. Verbal uses verbal while non-verbal uses cues. One way to communicate using signals is to use semaphore flags. By designing a sign language translator for flag semaphore, communicating using semaphore flags will be easier to understand, especially for those who are just learning or who don't know how to communicate using semaphore flags.

Flex sensor-based sign language translation system, is a sensor that functions to detect voltage differences when it's dented. The sensor is attached to the Long Sleeve Shirt, then the output of the semaphore flag movement is displayed on a computer screen. Thus the sender of the signal can communicate with people who are just learning and people who do not know the semaphore flag gestures.

In this final project, the author gets quite accurate results of the accuracy of the tool, namely the accuracy of the tool is 91.9% which is displayed using a laptop. The results of the translation of the tool displayed on the laptop screen are the letters of the alphabet indicating that the tool can read the sensor. Testing the Scout Semaphore movement obtained the lowest result of 80% and the highest of 100%. The factor that reduces the accuracy of the tool is the placement of the *flex* sensor on the shoulder of the long-sleeved shirt that the shirt is taken off and put on again so that the *flex* sensor's location always moves slightly each time you wear the shirt.

Keywords : Semaphore flag, sensor *flex*, Alphabet