ABSTRACT

One of division which had competed in Indonesia Intelligent Robot Contest (KRCI) 2009, was legged robot. The main regulation for that robot was its shape and movement was resembles to live creatures, both humanoid and anomalous. And now, this final project which refers to that main regulation will discuss about the six legged robot's movement – called hexapod and its speed.

Each robot's foot is installed by two types of servo motor GWS S03N STD which capable working in two ways, they are clock wise (clockwise) and counter clock wise (the opposite direction clockwise). The motor's direction and movement are controlled by setting the duty cycle of Pulse Width Modulation (PWM) signal on its pin control. To make robot can walk forward, backward, turn right, and turn left, then the appropriate algorithm is required. In this case, the algorithm which used is the C language that implemented through Code Vision AVR C Compiler software. Overall control system is governed by microcontroller Atmega8535.

Performance in this final project is robot can move in accordance with the main regulation of KRCI 2009 for legged-robot division, that is resembles the movement of live creatures. And the speeds which can make robot walks forward and backward at least five meters per minute and also moving rotate 180^{o} per minute. If robot has been able to walk with the movement and speed that is determined, so it is expected can walk on the KRCI 2009 field very well, through the existing obstacles, and perform the main task as fire fighting – that is searching and extinguishing the fire.

Keywords: humanoid, anomalous, servo actuator, clock wise, counter clock wise, Pulse Width Modulation, algorithm, C language, microcontroller ATmega8535.