

ABSTRACT

The ship movement control System must have specifications that be able to stabilize ship dynamics. The ship moves shaky because of outside influences that work on the ship. The objective of the control system is to get the ship follow the direction of the ship. Designing autopilot tracking control is still a challenging in the field of ship control systems, because the sea has different characteristics from the mainland so it is require and good autopilot.

From many existing control systems on ships, in this thesis will be discusses about the angle of the ship movement that be directed at a predetermined angle, the angle is determined by computer controllers in ship operators room. It has a purpose so that the ship can move in autonomous while being on a route which is constant. When the ship encounter interference from outside which resulted in the changed direction of the ship, the angle can be automatically returns to its original angle. Prototype autopilot can be controlled with a laptop as a user interface which uses wireless communication with a frequency of 433 MHz, without using the remote control. Ships can follow the direction of motion and error will be fixed if there is interference on the ship using a digital compass sensor HMC5883L that has been send on the PC.

The system control in the ship can follow the angle that has been set in. The ship move at a constant speed of 2 m/s. From the results of some experiments and then the most excellent selected results of the data can be result that is on the first attempt with 26 seconds rise time value, 33 setling time, and there is no overshoot.

Key word: *autonomous, autopilot, wireless, remote control, tracking control, sensor, actual boat degree.*