ABSTRACT

Kontes Kapal Cepat Tak Berawak Nasional (KKCTBN) is a competition organized by the Direktorat Pendidikan Tinggi (DIKTI).The contest there is a wide range of categories including category there are Autonomous. With the creation ofcategory Autonomous Boat designed in such a way so that it is able to be used for the competition of the race to come.

With the selection of the competition's categories, then Autonomous Boat is made using a primary device Raspberry Pi which is useful as a place for image processing.Autonomous Boat active if there is a colors object detected in Pi Camera Module. Object that used is a colors object ball has one dominant color withthe amountcolor needs three different kinds of colours there are red, yellow, and blue.Then the results of the colors object detection can control the rudder and ESC (Electronic Speed Control) in accordance with the logic of the process of image processing.

Autonomous Boat is able to follow every competition with an appropriate category creation. The parameters to be tested to determine the success rate of the system of Autonomous Boats that is the level of brightness,distance as a reference point between the autonomous boat with the balls color, spacing the balls color arranged in such a way so as to make a route path,as well as the resulting image processing when the position of pi camera module is placed upon a certain angle. By using these parameters, autonomous boat can pass through the trajectory with minimal failure rate.

Keywords: *Autonomous Boat*, *Raspberry Pi*, *Image Proccessing*