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## Abstract

Today this country has done research and manufacture of beach observer radar. But in this time it only can be implemented on side beach . For request from the shipping industry want it placed on ship. Beach observer radar placement on ship now have any problem in the biggest pillar . It will disturb radar function because there short reflection signal on this pillar. That can be anticipated with turn off transmute radar when transmute direct toward pillar.

Therefore in this thesis will be designed tool prototype to set turn on and turn off automatic transmute radar based transmute direction radar. Active and deactivate transmute radar controlled by combine ultrasonic sensor and compass sensor with fuzzy method as far and near distance pillar. If the ultrasonic sensor read a obstacle then deactivate of the transmute radar and otherwise. Combined two sensor to backup if ultrasonic trouble cause rainy moment then the angle control compass sensor to work this moment. So this prototype can work on every moment.

After implementation and examination on this prototype then can get deviation axis range  $14,3^0 - 29,3^0$  with error  $\pm 3^0$ . The distance reference of big billar 60-120cm form axis with big pillar width 30cm. Fuzzy speed can find faster more than normal condition with 20 rpm if it find a pillar prototype. Rain detector will swith off the ultrasonic sensor and switch on compas sensor for start inisialisation. The prototype data so success with 85% value of part sensor test and combine sensor test. If the prototype is make real so every helping research ship industries to created realy radar.

*Keyword : ultrasonic sensor, prototype, fuzzy, compas*