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RADIO FREQUENCY COMMUNICATION BASED SAFETY AND SECURITY FOR FISHERMEN

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Abstract : Fishing is the activity of catching a fish in the sea. But this can be fatal. Because our fishermen knowingly or unknowingly cross the border and land up in other country's marine waters. In this paper a quick fix is given to issue 'Fishermen capture their spot in the ocean'. For this, the sea area is divided into three zones namely; safe, intermediate and danger. The boat is allowed to roam anywhere within the safety zone. If the boat reaches the intermediate zone the buzzer alert is given to the fishermen. If the boat reaches the danger zone, an intimation is given to the fishermen. Else the engine gets stopped automatically. Now the control of the boat goes to the control room. The different ranges are identified using Received Signal Strength Indicator(RSSI).

Keywords: Zones; Buzzer Alert; RSSI.

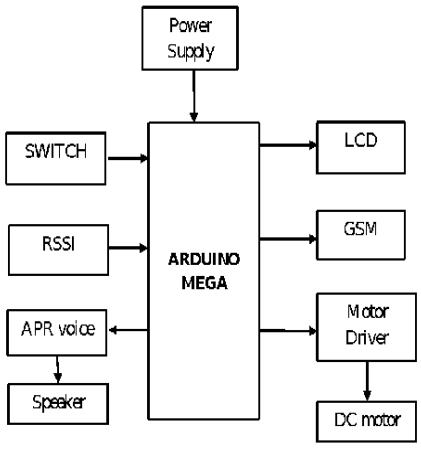
1.INTRODUCTION

The technology proliferation of Received Signal Strength Indication(RSSI) is used to provide location based positioning and time details in all climatic conditions and even anywhere at any time. This method focuses on implementing a border identification system for all boats. However, the existing system is not powerful enough to prevent the crime against fishermen as it gives only the information about the border identification but not about the exact distance that the boat has travelled from the border The proposed system's transmitter section includes ARDUINO microcontroller RSSI module, voice playback circuit and DC motor and the receiver section includes RSSI, PC as monitoring database in the control room of port. And we can send messages to the fishermen's home and control them through the Global System For Mobile Communication(GSM) module.

2.EXPERIMENTAL METHODOLOGY

In this proposed system , Received Signal Strength Indicator(RSSI) is used to track the boat location at any time. The RSSI technology helps in reading the boat and tells the localization of the boat. Received signal strength is a measure of power level that a RF client device is receiving from an access point. The received signal strength indicator will find the strength of the signal of Radio Frequency. Depending on the strength of the signal, the area is divided into safe, intermediate and danger zones. Based on the received signal we can find the boat location and intimate them about the location of the boat.

Transmitter Section



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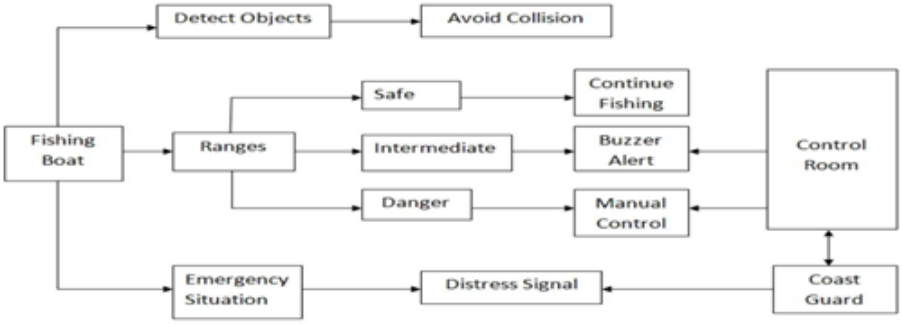
Receiver Section

Overall Architecture Diagram



3.RESULT

Here the 4 stages of the boat localization are displayed in LCD in the device including the initial stage. The upcoming images show the different warning notifications given to the fishermen when the boat is in each zone.

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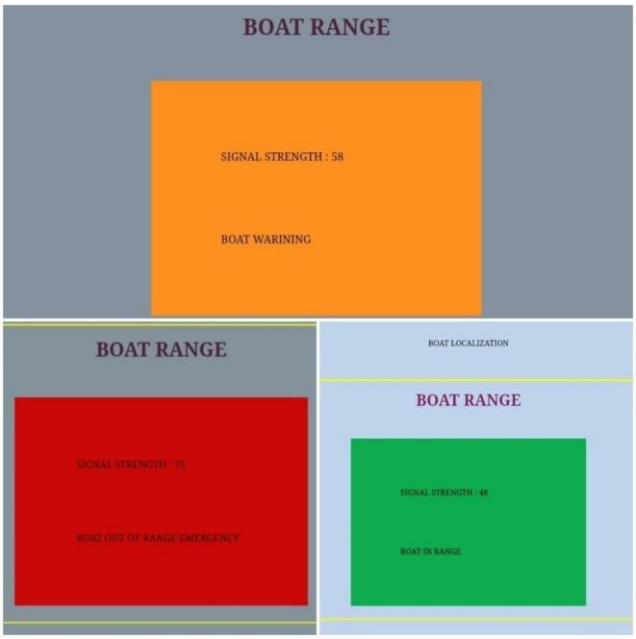

That is, If the boat is in the safe zone the green colour of notification is given.If the boat is in the mid zone the orange colour of notification is given.If the boat is in the danger zone,red colour of notification is given & also at this stage the boat is automatically stopped.

CONCLUSION

The fishermen boats broadcast its information and display their location. A pure RF based relative localization and tracking system by using TRIZONAL IMPLEMENTATION, thereby preventing the fishermen from crossing the border in sea. This system also provides an alert incase of emergency. If the boat reaches a specified region the control of the boat is under the control room. This system also helps to detect obstacles in the path.

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