

IDENTIFICATION OF SAFETY RANGE WITH DANGER ZONE ALERT SYSTEM IN TRIZONAL AREA FOR FISHERMEN SAFETY USING RSSI

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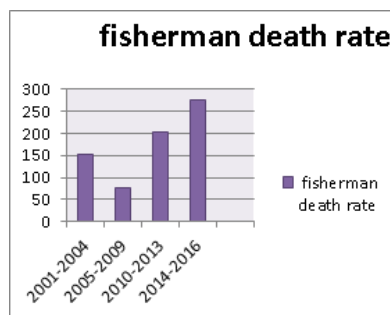
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Abstract

Localization and tracking are most general of all navigation applications. Particularly in this Project we are proposing to intimate the safe region for the fishermen to travel.. This technique helps fishermen to sail in safe zone without getting into trouble. This technique helps fishermen to sail in safe zone without getting into trouble. In addition to this Ultrasonic sensor is used to help fishermen to find any obstacle on the way. If in case of any problem, the fisherman can also send an emergency message to the control room and so that the coast guard can reach out for them. By using this system the fishermen can easily identify the national sea borders and therefore prevents them from entering their area. Thus saving their lives and providing good relationship with the neighbouring countries.

INTRODUCTION Usually the location and the safety zone are detected using GPS but for my implementation RSSI is used.

It provides good accuracy and good battery life time. Using this technique the safety of the fisherman can also be implemented, like alerting the fisherman by giving a buzzer sound if the border is crossed. The safe zone is the permitted area where fishermen can go and do fishing. The Intermediate zone is the border area shared by different countries Tracking is also one of the major need in identifying the particular location of the boat. We can also enquire if any illegal transportation is carried out. The advantage of RSSI localization is that it is nearly implemented in all receivers, and so it does not require any dedicated hardware. This technique helps the fisherman to sail in the safer zone. By using this system they can identify the national borders and therefore for preventing.



Death rate of fisherman in tamilnadu



An imaginary diagram for proposed system

1 IMPLEMENTATION

The implementation process comprises of six modules: 1.RSSI. 2. Trizonal implementation. 3. Security to the fisherman. 4. Server.

5. Control System. 6. Obstacle detection using ULTRASONIC SENSORS.

1.1 RSSI:

RSSI (Receiver signal strength indicator) is mainly used for having good accuracy and in the same time it is also used for checking the power management to achieve good battery life time.It is actually the measurement of power level in the client received device.The representation of the RSSI signal is in decibels.The power can be either positive or negative. RSSI heavily depends on the environmental interferences. Localization technology based on RSSI makes use of radio frequency signals.

1.2 TRIZONAL IMPLEMENTATION:

This module of implementation of trizonal area is being done by RSSI method.since the ocean is being divided into three zones as safety,intermediate and the danger zone.Ultrasonic sensors are used to detect icebergs ,attenuation of sound waves and the target .The boat is allowed to roam within the safety zone.



Architecture Diagram for identification of safety zone for fishermen in trizonal area

1.3 SECURITY TO THE FISHERMAN:

The boat is allowed to move around the ocean within the safety zone. A buzzer alert is given to the fishermen if he crosses the intermediate zone and the danger zone.If the boat crosses the danger zone and if it does not return boat to the safety zone or intermediate

zone within 30 minutes. A buzzer alert in the form of beep sound is being given to the fishermen. The signaling device used for giving buzzer alert can also be a mechanical electrical, piezo-electric.

1.4 SERVER:

This is primarily used for the verification of tri zonal area . This server not only verifies but also detect the Danger zone in the ocean .The safety travelling of the passengers is also being keep on maintaining and on observation , the zone information for the safety measures.

1.5 CONTROL SYSTEM:

This control technique, enquires if any illegal transportation is carried out. This technique helps the fishermen to sail in a safe zone without getting into trouble.. In case of any problem, the fisherman can send an emergency message to the control room ,so that the coastal guard can reach them. If they do not respond to alert and move their boats to the safe zone, the entire boats control comes under the control room of foreign port through Zig-Bee, fishermen's manual control is disabled.

1.6 OBSTACLE DETECTION USING ULTRASONIC SENSORS:

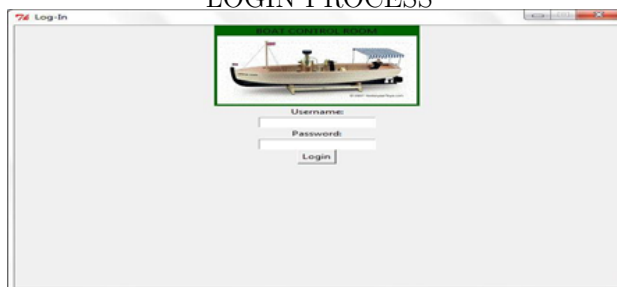
The ultrasonic sensors are used to detect the natural disaster around the sea .As it is a vision based sensor it do not have any physical contact with the target.And also acts as a device for measuring the temperature so that it can detect obstacles and provides safety to the fisherman.

2 EXPERIMENTAL RESULTS:

In this experimental we describe the safety for fisherman .As the nodes are fitted in boat are always active and it acts as System coordinator ,it has the synchronized communication between the nodes in the network. The communication is done through Zigbee

,which is in both the nodes. The Zigbee would be at sleep mode in the sensor node .The nodes will awake and sleep in the time slots or intervals. When the nodes are in sleep mode they cannot receive the RF message.The battery life time is also increased by using the power management techniques. The purpose of using RSSI is to have the distance measurement between the nodes. The transmission of the signals takes place by two nodes through Zigbee communication. The control room can detect which fisherman is in danger using the RSSI methodology.

LOGIN PROCESS



IMPLEMENTATION OF CONTROL SYSTEM



BOAT LOCATION TRACKING



3 CONCLUSION

The paper finally concludes that the wireless sensor network plays a vital role in the implementation of the wireless sensor network. The nodes are mainly used for synchronization to enable communication with the competing nodes in the network. This paper proposes implementation of energy efficient localization and also to track the position of the ships.

4 REFERENCES

References

- [1] Energy-Effective Limitation and Following of Cell phones in Remote Sensor Networks DOI 10.1109/TVT.2016.2584104, IEEE Transactions on Vehicular Technology, July 2016.
- [2] Y. Zhou, C.L. Law and J. Xia, "Ultra low-control UWB-RFID framework for exact area mindful applications," in Remote Interchanges and Systems administration Gathering Workshops (WCNCW), pp. 154158, April 2012.
- [3] Lynceus2Market - A creative people localisation framework for safe departure of substantial traveler ships. 2006.
- [4] Dr. Giri.M , Haritha.S, Subashree.P, Poojavathy Safe zone identification using wireless technique and alert system in International Journal of Advanced Research in Basic Engineering Sciences and Technology (IJARBEST) Vol.3, Special Issue.25, February 2017
- [5] R. Dinesh Kumar, M. Shubin Aldo, J. Charles Finny Joseph Alert system for fisherman crossing border using android in International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT) - 201
- [6] M. A. Al-Tae, O. B. Khader, and N. A. Al-Saber, Remote monitoring of Automobile diagnostics and location using a smart box with Global Positioning System and General Packet

Radio Service, in Proc. IEEE/ACS AICCSA, May 1316, 2007, pp. 385388.

- [7] Implementation Of Maritime Border Alert System. International journal of innovative research in electrical, electronics, instrumentation and control engineering, vol. 2, issue 3, March 6, 2015.