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Literature Review on Alert System for Fishermen Border Crossing

C.Viji[#], S.Dhanalakshmi*, K.Abinaya* and V.Gayathri*

[#]*Assistant Professor, Department of Electronics and Communication Engineering, SVS College of Engineering, Coimbatore, India.*
**UG Scholar, Department of Electronics and Communication Engineering, SVS College of Engineering, Coimbatore, India.*

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ABSTRACT

The application can be widely used by people in the border to find the appropriate path to reach the destination. The notification will be sent to the border security forces which act as the server to all other devices that are operated by people in ships. The application will notify the information of where the devices are being located and intimate them about the issues that occur due to opponent forces in ships to server. This can act as an incident management application to avoid conflicts at varying situations. This is processed mainly for Tamil fishermen's who are employed in the borders. The automatic alarming system is going to be provided along with this device which alerts in case any sort of issues. This is devised in such a way that the application can be easily been utilized by all the people in the surroundings. The application operates based on device tracking. This provides ease to operate even for illiterate people.

Keywords: Border security, server, automatic alarming system and fishermen.

1. INTRODUCTION

The Indian Coastguard was formally inaugurated on 18 August 1978. It is set as an independent armed force of the Indian Union, through an act of parliament. It is the fourth armed force under the Ministry of Defence- the first three being the Army, the Navy and the Air Force. It has a specific character for nonmilitary security but addresses to National Defence. It normally deals with marine safety, maritime security, lifesaving, law enforcement, maritime environmental security and fisheries. These call for monitoring, control, surveillance and response. The Coastguard has multiple responsibilities and strengthening the safety of fishers.[4] Fishers are vulnerable to disasters of several kind-accidents, casualties, abduction, and alien interventions. The Indian coastguard cannot assist fishers exclusively but concern for fishers is central to its aims. The strategic role of the Coastguard is to protect the maritime zones from illegal activities including infiltration through maritime routes and environmental damage and provide humanitarian and scientific assistance within the maritime domain.

The Indian Coastguard too has its exclusive duties and functions as spelled out in the Coastguard Act 1978 include:

1) Safety and protection of islands and offshore structure.
2) Protection and preservation of maritime environment.
3) Prevention and control of pollution in maritime zone.
4) Assistance to the customs in anti-smuggling operations.
5) Assistance to fisherman in distress at sea.
6) Safeguarding life and property at sea.
7) Preventing poaching in Indian water.
8) Assisting in ocean research.
9) Enforcing maritime law.

Even though we have this much of coastguard security, all things happening opposite to our thinking. Indian Coastguard has openly admitted its failure in failure in preventing Mumbai attack even after getting a warning from intelligence sources prior to the attack. This clearly shows that our sea defence is weaker than we believe. The foreign trawler easily overcoming our coastguard security force. Every day we hearing news about fishermen killed or imprisoned when they cross the national sea border inadvertently. The most outstanding problem is being going on for trans-border fishing i.e., on the Indo-Srilankan border. Here two distinct issues are arising. First is the movement of Indian boats into Srilankan water without any intimation or prior information that they crossed the border area. Historically there is no border problem which is being raised and fixed in 1974 and having no conflicts till civil war in 1983. After this both country authorities restricted due to security concern. After that restriction also, smaller scale fisherman undergo for fishing and get attacked. In India, they have always been at loggerheads with the trawls fleet.

1.1 Overview

The device would also warns the fisherman (beep and vibrate) when they approach near the national sea border and controls them to trawl (go fishing) within the correct region safely [1]. Designed system using embedded system which protects the fishermen by notifying the country border to them by using Global Positioning System (GPS) and Global system for mobile communication (GSM). It helps the fishermen not to go afar of border. If the fishermen violate the border agreement, an alarm (danger signal) is generated indicating that the fisherman has violated the rule.

The fisher man crosses the sea border the warning signal is given to both the countries and alarm indicated to fisher man, when he arrives further the boat will automatically stops and OTP is given to the opposite countries. The application works as an automatic incident management application that intimates the user if border crossing occurs. The sailor crosses the border the alarmed is used for identification of fisher man [5-8] and alert message is given to both countries.

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Literature Survey

Sl. No.	Name of the Author	Paper Title	Publication	Approach and concept about Work
1	J Charles Finny Joseph, R Dinesh Kumar, M Shubin Aldo	Alert System for Fishermen Crossing Border using Android	International Conference on Electrical, Electronics, and Optimization Techniques - 2016	The application can be widely used by people in the border to find the appropriate path to reach the destination. The application will notify the information of where the devices are being located and intimate them about the issues that occur due to opponent forces in ships to server. This can act as an incident management application to avoid conflicts at varying situations.
2	Archana Gupta, Mohammed Abdul Qadeer, Sandeep Kumar	Location Based Services using Android	2009 IEEE	From the available GIS processing tools in Android we can realize all three types of LBS services as a mobile can be configured as a server and for that we can also use the SQLite database to store information as android also supports this technology. We can configure the two mobiles to provide peer-peer LBS services through SMS or MMS with the use of appropriate intents.
3	Pulathisi Bandara, Udana Bandara	Tagciti: A Practical Approach for Location-Aware and Socially-Relevant Information Creation and Discovery for Mobile Users	2008 IEEE	Tagciti is a novel location-aware and socially- relevant information creating and discovering service for mobile users. Instead of depending on commercially created location related information, Tagciti provides users the necessary means to become part of the information creation process. It enables the creation of dynamic, up to date, and socially-relevant shared information. Also, it provides an effective mechanism to discover created information in a socially-relevant and location-aware manner utilizing users' social network and location information.
4.	Majid A. Al-Taee, Nabeel A. Al-Saber, Omar B. Khader	Remote Monitoring of Vehicle Diagnostics and Location Using a Smart Box with Global Positioning System and General Packet Radio Service	2007 IEEE	Distributed system is achieved by using on-board microcomputer system, called On-Board Smart Box (OBSB), General Packet Radio Service (GPRS) and a remote server. The OBSB which is equipped with an integrated Global Positioning System (GPS) receiver is empowered by a software application that manages the processes of local data acquisition and transmission of the acquired data to the remote server via GPRS.
5	Patricia Dockhorn Costa, Richard Etter, Tom Broens	A Rule-Based Approach Towards Context-Aware User Notification Services	2006 IEEE	Pervasive Computing is the vision of technology that is invisibly embedded in our natural surroundings. Users are offered unobtrusive services that require minimal attention. In this paper the Awareness and Notification Service (ANS) is presented that enables to rapidly build applications that inform users about their environment. Additionally, the service offers notifications tailored to the user's preferences and current context.

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1.2 Existing System

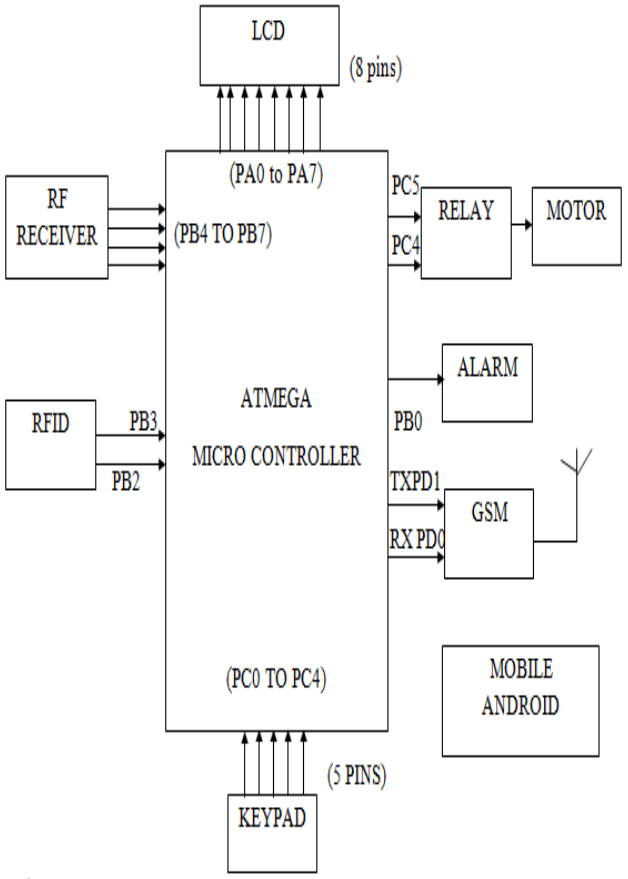
In present days the fisher man crosses international sea border it will intimate [2] the alarm signal only. In this case there is no feedback is given to the system and for both the countries, there is no secure for the fisher man which leads to death of fisher man. The problem may arise the issue between two countries.

1.3 Proposed System

In this system we have implement the embedded system to safe the fisher man life and to avoid the problems between two countries, make good relationship between two countries. In this method the embedded technology is implemented for better accuracy and save human life.

The fisher man crosses the sea border the warning signal is given to both the countries and alarm indicated to fisher man, when he arrives further the boat will automatically stops and OTP is given to the opposite countries. The reputed person contains the OTP if matched to fisher id then proceeds to sail the boat or may take any action for crossing border. Here the fisher man life is safe and can know the status of both the countries.

1.4 Modeling Circuit



An RF receiver module receives the modulated RF signal, and demodulates it. There are two types of RF receiver modules: super heterodyne receivers and super-regenerative receivers. Super-regenerative modules are usually low cost and low power designs using a series of amplifiers to extract modulated data from a carrier wave. Super-regenerative modules are generally imprecise as their frequency of operation varies considerably with temperature and power supply voltage.

Super heterodyne receivers have a performance advantage over super-regenerative; they offer increased accuracy and stability over a large voltage and temperature range. This stability comes from a fixed crystal design which in turn leads to a comparatively more expensive product.

RFID Reader Module, are also called as interrogators. They convert radio waves returned from the RFID tag into a form that can be passed on to Controllers, which can make use of it. RFID tags and readers have to be tuned to the same frequency in order to communicate. RFID systems use many different frequencies, but the most common and widely used & supported by our Reader is 125 KHz. An RFID system consists of two separate components: a tag and a reader. Tags are analogous to barcode labels, and come in different shapes and sizes.

The tag contains an antenna [4] connected to a small microchip containing up to two kilobytes of data. The reader, or scanner, functions similarly to a barcode scanner; however, while a barcode scanner uses a laser beam to scan the barcode, an RFID scanner uses electromagnetic waves.

To transmit these waves, the scanner uses an antenna that transmits a signal, communicating with the tags antenna. The tags antenna receives data from the scanner and transmits its particular chip information to the scanner.

2. CONCLUSION

Thus 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. Also, the piracy of ship can be easily brought under control.

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REFERENCES

[1] J Charles Finny Joseph, R Dinesh Kumar, M Shubin Aldo, “Alert System for Fishermen Crossing Border using Android”, *International Conference on Electrical, Electronics and optimization Techniques (ICEEOT)*-2016.

[2] Archana Gupta, Mohammed Abdul Qadeer, Sandeep Kumar Location Based Services using Android, *978-1-4244-4793-0/09, 2009 IEEE.*

[3] Majid A. Al-Taee, Nabeel A. Al-Saber, Omar B. Khader, “Remote Monitoring of Vehicle Diagnostics and Location Using a Smart Box with Global Positioning System and General Packet Radio Service”, *1-4244- 1031-2 /07, 2007 IEEE.*

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[4] Pulathisi Bandara, Udana Bandara, "Tagciti: A Practical Approach for Location-Aware and Socially-Relevant Information Creation and Discovery for Mobile Users", *978-1-4244-2489-4/08, 2008 IEEE.*

[5] Patricia Dockhorn Costa, Richard Etter, Tom Broens, "A Rule-Based Approach towards Context-Aware User Notification Services", *1-4244-0237-9/06, 2006.*

[6] Palanivel Kodeswaran, Vikrant Nandakumar, Shalini Kapoor, Pavan Kamaraju, Anupam Joshi, Sougata Mukherjea, "Securing Enterprise Data on Smartphones using Run Time Information Flow Control", *IEEE 2016.*

[7] Sokol Kosta, Andrius Aucinas, Pan Hui, Richard Mortier, Xinwen Zhang, "ThinkAir: Dynamic resource allocation and parallel execution in the cloud for mobile code offloading", *IEEE 2016.*

[8] Khandaker Mustakimur Rahman, T.Alam, M.Chowdhury, "Location based early disaster warning and evacuation system on mobile phones using Open Street Map", *IEEE 2016.*

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