Adaptive Modernised Military Assistance and Establishments Forsri Lankan Captives

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Abstract: **The fishermen of Rameswaram and Tuticorin are taken as captives for crossing the International Maritime Boundary Line (IMBL) by the Sri Lankan navy. Positively no remedies were found for this well-known social issue. A system has been proposed which involves a scientific approach in which the boat is fitted with GPS which senses the current position. By comparison, if the vessel is at 100m, a warning signal is transmitted to the boat as well as to the control centre located offshore. By moving further, i.e. at 50m, the boat stops and starts reversing its direction. At the front portion of the boat, a gun is fixed along with a wireless camerawhich acts as a protection mechanism for the fisherman. In case if there is any attack by the opposite side, the system senses the change and the camera turns on automatically. Thus, the entire scenario can be recorded and it can be monitored by the control centre which controls the mobility of the gun based on the camera's view. Thus, any sort of attacks can be retaliated by using this system. Apart from that, instead of GPS, Fisher Friend, a mobile app developed by M.S.S.R.F have been used as it acts as a real time GPS assist and it provides exact position of the fisherman.**

Keywords: **IMBL, GPS, Boat, MSSRF, Camera, Fisher.**

I. INTRODUCTION

Though Sri Lanka and India were separated by only 12 nautical miles, Sri Lankan Navy has several alleged incidents such as personnel firing over Indian fishermen while fishing in the Palk Strait. On priority basis, Government of India in mutual relationship with the Srilankan government taken up various safety measures for Indian fishermen's. A team has been constituted named as JWG (Joint Working Group), to deal with the issues of fishermen who were straying in the territorial waterside in Srilanka. The quick release of confiscated boats and working towards onward bilateral arrangements for licensed fishing has to be taken care by the JWG. Also, using the Srilankan navy force against the Indian fishermen would be monitored and should be prevented by the JWG. But, till date of time, JWG met only four times and they have not come up with any satisfactory solution to address the concern of fishermen. As a humanitarian ground, the imprisoned fishermen would be released on the needwhich will be stressed by JWG. The alleged involvement of Sri Lanka Navy attacks over the Indian fishermen has been officially protested by the Govt. of India on 12th January 2011. For the past 30 years, over 530 fishermen have been killed. It is strongly condemned the apathetic behaviour of the Indian government and the attitude of national media towards the alleged killing of Tamil Nadu fishermen.

The IndianGovernment have been condemned by Several politiciansfor not doing enough to stop the killing of Tamil fishermen and also for offering training, equipment, and strategic cooperation for the Sri Lankan Navy.A straying takes place inadvertently, due to sheer ignorance about maritime boundariesfrom the fishermen's point of view.At that time, the drift occurrence is because of engine failure or may be strong currents.At the same time, quite a few Indian fishermen engage in free floating to knowing full well, the risks involved in crossing the International Maritime Boundary Line (IMBL).Indian Coastguard has been openly admitted its failure in preventing 26/11 Mumbai attack even after getting a warning from intelligence sources prior to the attack. From this we can believe and clearly indicates that our sea defence is too weak.Occasionally the fishermen sight a foreign trawler poaching in their fishing grounds, they are forced to watch helplessly in fear that they might be severely injured or killed.Without any fear of penalty, the trawler would often leave. Due to the cause of environmental crisis in coastal zones, Poaching is getting into a serious problem.

II. EXISTING SYSTEM

Presently, there are fewsystems exits which help to locate the current position of the boats/ships using GPS/RADAR Navigation system and can be viewed in an electronic map. While navigating in the sea, for the identification purpose GPS72H has been used by the fishermen. This givesfaster and most accurate method for the mariners to navigate, to measure the speed and determines the location. This enables improved levels of safety and efficiency for the marinersacross the world and accurate position, precisespeed is needed to ensure the vessel to reach its destination more safely. The accurate and precise position matters about their existence becomes even more tedious as the vessel departs or arrives in port and a person has to watch the system for the detecting the malpractice of the boats. In this case there may be a chance of manual error to find the boats which crosses the boundaries. Also, the informationregarding the maritime boundary crossing, manually the boats have to pass to coastal guards. This will also give the time to trace and warn the boats.

III. PROPOSED SYSTEM

The proposed system reduces and overcomes the drawbacks present in the existing system. It involves the usage of fisher friend, an Android application which was designed by M.S.S.R.F along with Qualcomm especially designed for fishermen. It provides crucial information about weather and ocean conditions up to 100 kilometres (about 62 miles) from the shore including disaster alerts, Potential Fishing Zones (PFZs) and current market prices of fish helping the fishermen to improve their catch and their incomes. It alsoalerts the fishermen of Tamil Nadu, when they are reaching the international boundary line enabling them to change the course and avoid crossing the border. Presently, about 400 Fishermen are using this application. So, it may act as a real time GPS Tool to assist them better. Microcontroller functions may act as a centre for the entire operation. Also, when the boat is at 100m, the controller initiates the warning signal by controlling the speed of the motor 75%). When the boat is at 50m, the motor stops and starts reversing direction thus not even moving towards the border.

Also, a camera is fitted along with a gun setup which records the entire scenario online in case of any attacks by the Sri Lankan navy. It will be monitored and controlled by the control centre which retaliates in case of attacks.

The system comprises of three units namely: -

1. INPUT UNIT
2. ROBOT UNIT
3. CONTROL UNIT

3.1 Input Unit

The input section consists of an RF transmitter which acts as a input to the robot unit by transmitting the signalindicating the presence of any change. The RF transmitter indicates whether the intrusion is authorised (Indian side) or unauthorised(Sri Lankan side).

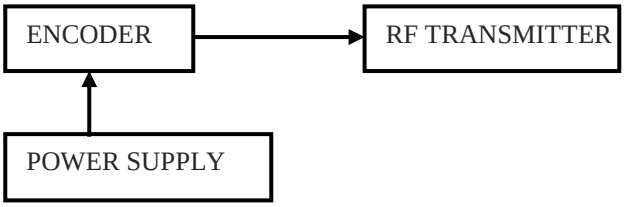

Fig 3.1 Input Unit

3.2 Robot Unit

It acts as a heart of the proposed system which acts based on the input and sends signals to the control unit for further action.

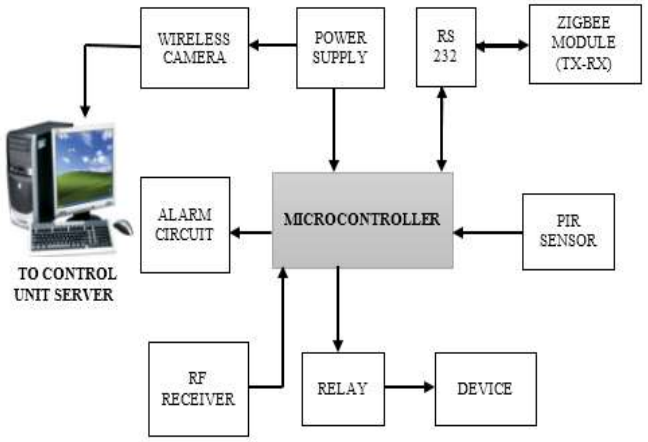

Figure 3.2 Robot Unit

3.3 Control Unit

It performs the final action and monitors the entire system. Based on the information from the robot unit, it processes and acts upon it accordingly.

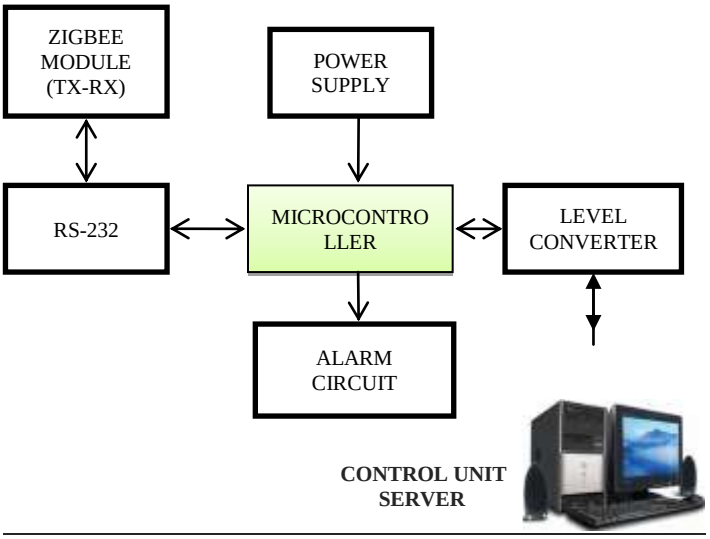

Figure 3.3 Control Unit

IV. SIMULATION RESULTS AND DISCUSSION

The Robot unit is placed in the Fisherman Boat which acts upon by any change which will be detected as shown in the fig2.1. It contains an RF transmitter which acts as an input. When authorised person is coming in the opposite side, the fisherman presses the button such that no action takes place as shown in fig 2.2. When any unauthorised movement is detected, the fisherman will not press the button which in turn transmits the information to the control unit which performs the final action as shown in fig 2.3.

Robot Unit

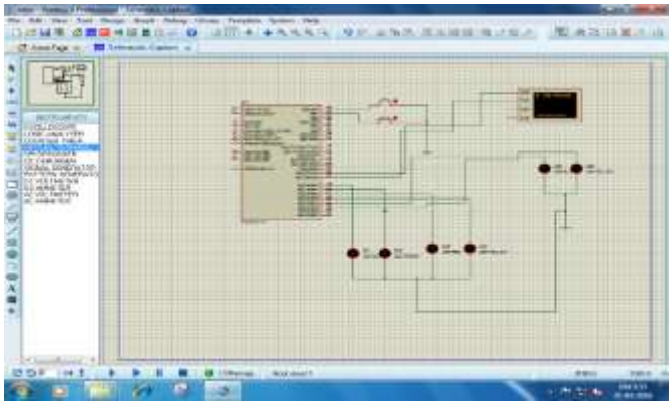

Fig 4.1 Robot Unit

When Authorised signal is Transmitted

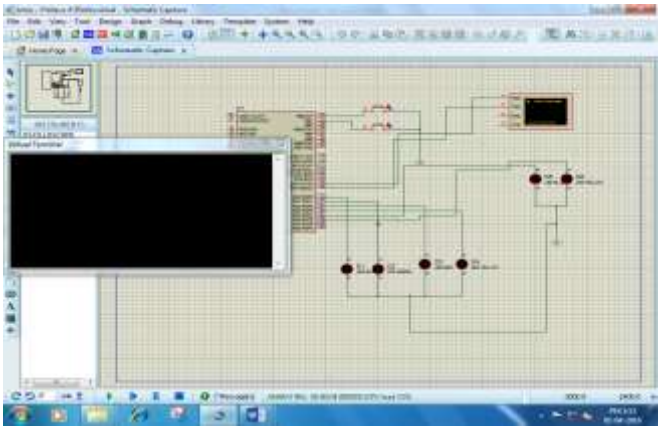

Fig 4.2 Authorised Signal

When Unauthorised Intruder is Detected

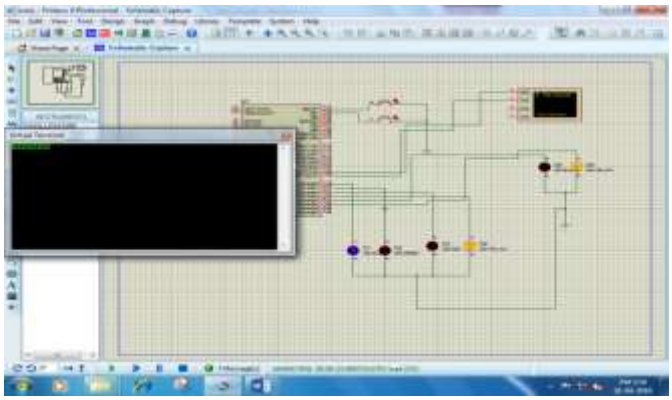

Fig 4.3 Unauthorised Intruder

V. HARDWARE

The Robot unit and control unit will be given as shown in the Fig 3.1 and Fig 3.2respectively.The Robot unit contains a gun setup with RF Tx-Rx module which is used for authorisation. Also, A Zigbee Tx-Rx module is used for transmission with the control unit. Both units contain a PIC Microcontroller which performs the necessary control mechanism.

Robot Unit

Fig 5.1 Robot Unit

Control Unit

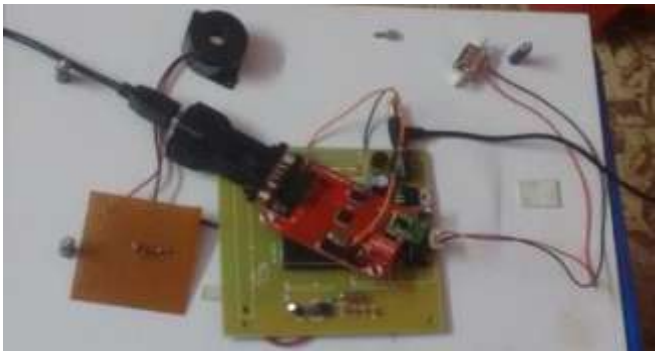

Fig 5.2 Control Unit

VI. FUTURE SCOPE

The project can be extended in future by automating the entire process such that there is no need for any person to monitor in the control room which monitors the entire system. Therefore, By using Reset on acknowledgement, The entire system can be automated. In the proposed system, we are using Fisher Friend as a GPS Tool for detecting the current position of the Boat. Since Smartphone is widely used in the fishing community owing to the awareness of this app, the stopping and reversal of the motor can be controlled using the phone itself because advanced programming is available using phone. Also, the boat's power supply (using battery system) can be replaced by using solar energy or by harnessing Tidal energy.

VII. CONCLUSION

The project deals with the safety of fishermen at an enhanced level. Thus, by implementing it, the fishermen can venture into the sea without any fear thus providing a comfort zone to them. In real time, this can be made such that the boat's engine can be controlled since Diesel engine needs a prime

mover like electric motor, the electric motor can be controlled such that boat's movement can be monitored by advanced programming. Thus, the performance level must match with the parameters which are expected.

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