

## Border Surveillance System

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### ABSTRACT

Border surveillance is the most important task in the field of national defense and security. To maintain peace and to ensure safety of a country's people, the borders need to be kept under 24/7 monitoring. Especially, under current circumstances, when activities like terrorist infiltrations and illegal movement of both living as well as non-living beings have become common, it becomes of utmost importance to strictly protect the border areas against such activities

**Keywords:** Border surveillance, monitoring, infiltrations

### INTRODUCTION

To curb such happenings on the border areas, the least that can be done is to provide constant monitoring. In current scenario, this monitoring takes place manually by the border security forces which are responsible for continuously keeping an eye on the borders. It takes a lot of manpower and assets as the borders are stretched across hundreds of miles and have extreme terrain as well as climatic conditions. Hence, the need of the hour is to design an automated border surveillance system which can perform the surveillance task without requiring any human assistance. It can eliminate the need of deploying humans at hostile conditions at all the times. Moreover, in case if something suspicious is detected by the system, it must be able to take the necessary decisions and hence actions along with issuing alert messages for the human controllers. The central control rooms can be set up at a distance from the border area. Once the human controller is aware of the intrusion, it is upon him to decide the next course of action

### MODULE IDENTIFICATION

**Scenario 1:** The potential intruder (an animal) is on the other side of the border and cannot be detected by the PIR sensors but is in the camera's field of view. Note that potential intruder here could be a human or an animal.

**Scenario 2:** The potential intruder (Human being with weapon) is close to the border fence and in the proximity of the PIR sensors as well as in the camera's field of view.).

**Scenario 3:** The intruder (an animal) has crossed the border fence and is still in the proximity of PIR sensors as well as in the camera's field of view.

**Scenario 4:** The intruder (Human being) has crossed the border fence and is still in the proximity of PIR sensors as well as in the camera's field of view.

## LITERATURER SURVEY

**Intruder Detection by Extracting Semantic Content from Surveillance Videos:** present a survey of wireless sensor networks for Border Surveillance and Intruder Detection. The aim is to devise a multi-sensing system which is developed by combining different techniques of surveillance and intruder detection, for varying border scenarios such as, flat surface movement or water-body movement. Different sensors for human intruder detection such as, geophone, hydrophone, infrared and surveillance cameras are discussed.

**Border Intruder Detection System :**propose a model to study videos captured by surveillance cameras and extract features from it after converting video to shots. Basic features are extracted by employing an object tracking method based on ROI. At last, semantic content extraction results in recognizing the intruder without any false matching.

**Automatic Intruder Combat System: A way to Smart Border Surveillance :**presents a framework which combines the human target detection, tracking and face-recognition based human identification for surveillance purposes. Background subtraction is employed for the detection of moving targets. Face recognition involves detecting the face of the target. If face detection fails, then target tracking continues

## PROPOSED SYSTEM

The proposed system is a smart border surveillance system which can prove to be helpful for our border security forces. It is able to provide round the clock video surveillance at the places where human deployment is not possible due to geographical, climatic or some other reasons. Multiple pyro electric infrared sensors (PIR) are disguisedly installed on the border fencing which monitor the border area for any intrusion.

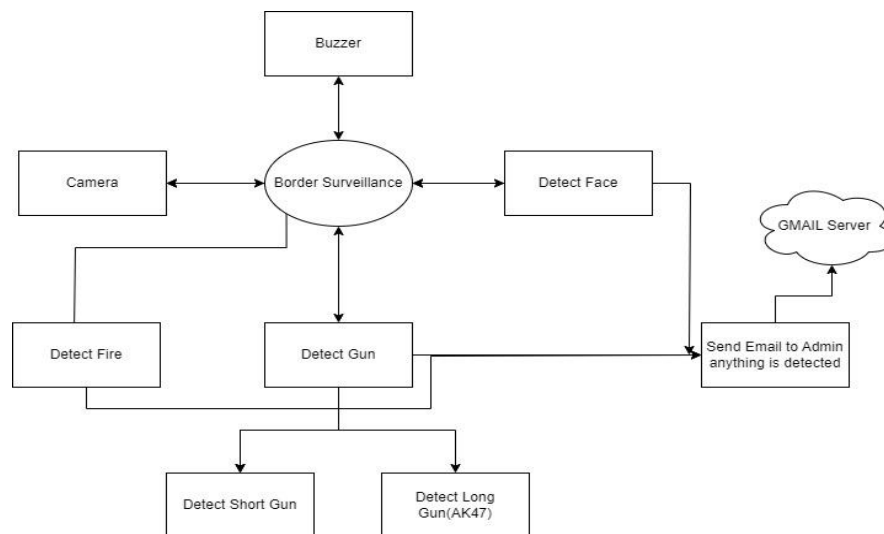


Fig. System Architecture

## **APPLICATION**

The smart border surveillance system can not only assist the defense forces to enhance the security of border areas but also can help save a considerable amount of labor and assets. It involves the use of advanced technology keeping in mind the cost effectiveness.

## **ADVANTAGES**

The online auction system has made customers more efficient and efficient in their behavior and has driven businesses to new heights, forcing many to make the adjustments and changes necessary to reach a new market of knowledgeable consumers. The rapid growth of e-auctions has led to an e-transformation in global retail infrastructure. Thanks to a growing internet and higher incomes and a more savvy population, despite many obstacles. Secure online payments, good for electronic stores, return policies and exciting discounts help you understand the benefits of the auction system.

## **FUTURE SCOPE**

In future, we can design this system for use on a larger scale. As with passing time the technology is constantly improving, the system can be equipped with more advanced and sophisticated hardware. The proximity sensors, object detection mechanism and response mechanism, if made using state-of-the-art technology, can make the working of the proposed system even more accurate and time-saving.

## **CONCLUSION**

The proposed system could be a great help in enhancing the security of our border regions especially, the areas facing extreme climatic or terrain conditions where human deployment is a major peril. Although the system may not be able to provide advanced border security but can surely provide solutions to border security surveillance on a small scale. As the system detects intruder, an alert message is generated along with the transfer of the snapshot of the intruder to the main system. Then, the appropriate steps are taken to eliminate the threat as the location of generation of the signal is also available

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