# LABVIEW BASED AUTOMATED SHOOTING EQUIPMENT

***(KSCST SPONSORED, NO. 33S0907 )***

*Project report submitted in partial fulfillment of the requirements for the award*

*of the degree of*

**Bachelor of Engineering**
***in***
**INSTRUMENTATION TECHNOLOGY**
**of**
**Visvesvaraya Technological University, Belgaum**

*by*


| | |
|---|---|
| **ANUSHA PRAVAS BS** | **1SI06IT003** |
| **RAVINDRA NATH THAKUR** | **1SI06IT031** |
| **SHASHI KUMAR** | **1SI06IT038** |


Under the guidance of

**Smt. H.M.KALPANA**

Assistant Professor,Dept of I.T&E,

S.I.T,Tumkur


Department of Instrumentation & Electronics
**SIDDAGANGA INSTITUTE OF TECHNOLOGY**
**TUMKUR-572103**

2009-10

# ABSTRACT

Safety monitoring along the borders of a country is of utmost importance. But sometimes it becomes unfavourable for the human beings to guard the borders, surviving there, due to the climatic conditions and other unfavourable circumstances. Our country is very well armed with dedicated defence personnel. Yet, thousands of soldiers go in person to confront the hazardous situations and most of them never come back. An autonomous monitoring in such places will not only increase the surveillance but also avoid loss of lives.

Here is an attempt to develop an autonomous control system that invigilates the surroundings constantly and takes corrective actions wherever necessary. A prototype for the same entitled **'LabVIEW Based Automated Shooting Equipment'** has been developed and tested. It is an autonomous surveillance system which inspects the vicinity and any intruder (object) entering the field of interest can be easily recognised and shot on spot without any presence of a human being there to take care of the situation.

Prototype has been designed using an object in the place of an intruder. The system uses a web camera which constantly captures images of the field of interest and sends to the PC. The program is built using the graphical programming language of LabVIEW 8.6, a software package of National Instruments, installed in the PC. The program constantly checks for any object coming in the field of view. If any object is detected, the program activates the actuators to drive the motors which targets and shoots the object. The program uses the vision module of LabVIEW 8.6 for detection of objects. Upon detection using several image processing techniques like thresholding, pattern matching etc, it sends the output signals to the stepper and DC motors through NI USB DAQ 6016 card which acts as an interface between PC and the driving circuits (L298 and L293D). The stepper motors then control the direction of the gun so as to target the object. Once the target is fixed, DC motor triggers the gun to shoot the object. The system can also be manually operated in places where precise selection of objects to be shot is required, where automatic selection can create unfavourable consequences. Remote control of the module is also possible through a **web browser** via internet which can only be accessed by the authorized person who is far away from the place and yet can log in using a secure identity and password to control the operations.