**A BLACK BOX ALERT SYSTEM FOR CRASH RECOVERY N PREDICTION USING MICRO ELECTRO MECHANICAL SYSTEM TECHNOLOGY**

An automatic alarm device for traffic accidents is introduced in this project. It can automatically detect a traffic accident, search for the spot and then send the basic information to first aid center within two seconds covering geographical coordinates, the time and circumstances in which a traffic accident takes place. By means of satellite navigation system, first aid rescuers can accurately locate the place, so that they can save the injured people as soon as possible.

**INTRODUCTION:**

The rapid development of economic construction and people's living standard continues to improve. as well as road traffic accident take place frequently which caused huge losses of life and property to the country and people.

So it is a time to design an equipment which can detect accidents ,search of accident place and sent rescue alarm automatically. Application of this device can significantly shorten the warning time of the accident and determine the accident site. Accident detection and information sending are full automated, which win a valuable rescue time.

**PROJECT DESCRIPTION:**

The traffic accident automatic detection system consists of **control module, Information detection module, message sending module**. The information detection module contains GPS navigation system nod triaxis accelerometer. When a vehicle collision accident occurred, accelerometer detects the level of the collision automatically, vehicle rollover accident occurred, the Z-axis of small range acceleration sensor automatically detects the vehicle roll angle . Accident signal is sent when the angle is greater than the set value given. using SMS accident information (accident geographical coordinates, altitude, license plate number, time, date) sent to the owner's family and friends, rescue units.

**BLOCK DIAGRAM**

Power supply unit

GSM Network

Single-Chip computer

Triaxis accelerometer Sensor

GSM module

GPS Navigator module

GSM Network



Message to family and friends, rescue team

**HARDWARE & SOFTWARE REQUIREMENTS:**

* **Hardware components**:
* Target MCU – PIC 16Fx
* Triaxis accelerometer sensor,
* GSM and GPS Modem
* **Software tools**:
* Development tool – MPLAB IDE v7.42
* Hardware Compiler - HI-Tech PIC C
* Programmer - PIC Flash
* Hardware Simulation tool - Proteus v7.6Sp0