Smart Vehicle Breath Analyser

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Abstract— **Vehicle accidents have become a primary concern. Now a days, people are organizing late night parties getting alcoholic and after that they tends to drive the vehicle, but due to their lack in consciousness they may cause serious falaties in the road. So we present a technology that will help to lower or reduce the consequences caused due to this effect.**

Index Terms—**Alcohol, Bio-engineer sensor,Ignition,micro processor, alcoholic sensor, Blood Alcohol Content.**

I. INTRODUCTION

Driving while either intoxicated or drunk is quite dangerous and driver with high blood alcohol content are at greatly increased risk of car accidents, highway injuries and vehicular deaths. Every single injury and death caused by drunk driving is totally preventable. Although the proportion of crashes that are alcohol-related has dropped dramatically in recent decades, there are still far too many such preventable accidents. Unfortunately, in spite of great progress, alcohol-impaired driving remains a serious national problem that tragically affects many victims annually.

Most Drivers who have had something to drink have low blood alcohol content and few are involved in fatal crashes. Here given some conclusion about the accidents caused due to drunk driving.

 - The average Blood Alcohol Content among drunk drivers is .16
 - The relative risks of deaths of drivers in a single vehicle crash with a high blood alcohol content is **385** times than the zero Blood Alcohol content driver and for a male driver its **707** times that of a sober driver estimated by Insurance Institute of Highway Safety (IIHS).
 - High Blood Alcohol Content drivers tend to be male aged between 25-35.
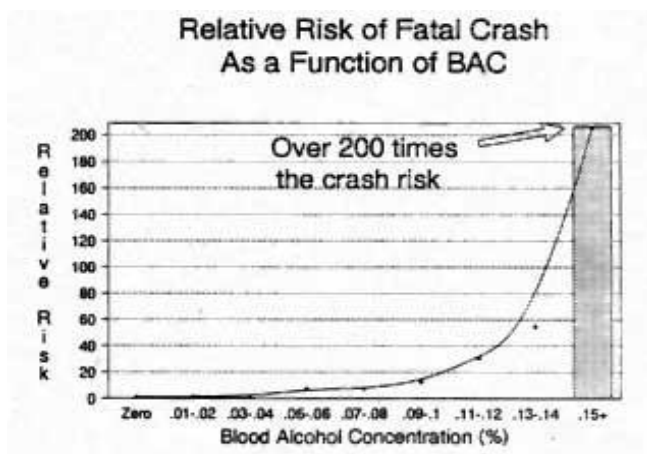
II. SOLLUTION

This technology implies a alcohol sensor which conducts a **breath alcohol test** and if that test exceeds **0.08%** blood alcohol content limit, then the automobile breath analyzer will disable the car's ignition module.

III. BENIFITS

 - Determines whether a driver is in driving condition or not.
 - Protects the user, the general public and property from serious damage thus saving both lives and money.
 - It's an economic approach and does not require heavy price to install the equipments.

IV. FEATURES

 - Indicates 'pass','fail' and 'warning' stage of intoxication.
 - Disable the ignition if an user exceeds **0.08 %** BAC.

V. PROCESS SEQUENCE
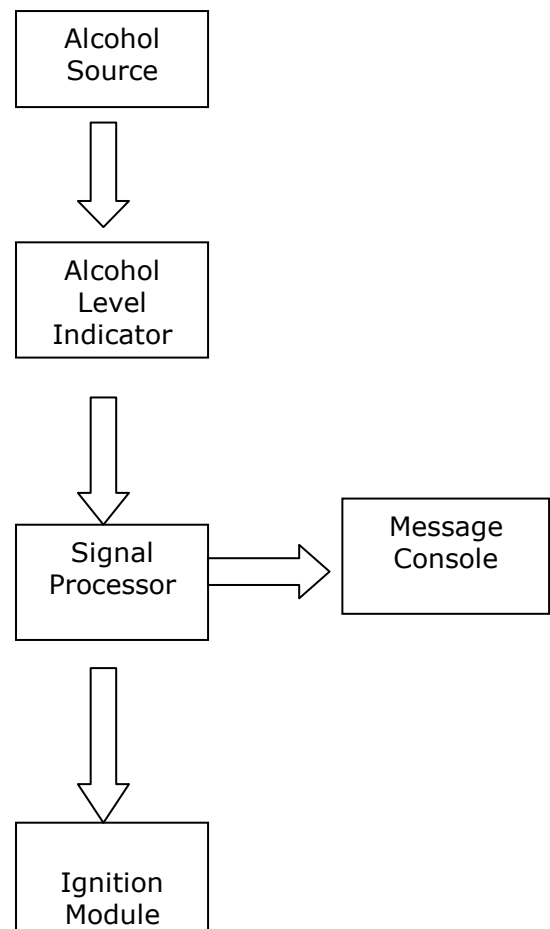
VI.   OPERATION/METHOLOGY

The Alcohol Source can be a alcohol sensor which will be located at the centre of the steering wheel such that its installation position will acquire maximum contact of human breath. The input to the sensor is the human breath that is directly fed into the alcohol level indicator.

The Alcohol Level Indicator determines and displays the Alcohol Source's Body Alcohol Content. Using a method appropriate for the device ultimately purchased, the electrical representation of this result (e.g., voltage) is fed into the Signal Processor for further analysis.

The Signal Processor includes possibly basic amplifiers to augment the output signal from the Alcohol Level Indicator and a microcontroller to regulate access to the ignition and to trigger appropriate messages to the user.

Based on outputs from the microcontroller, LEDs on the Message Console indicate such conditions as "Pass," "Fail," and "Warning."

Coupled to the Signal Processor possibly by a transformer, the Ignition starts if the user's BAC is acceptable. For demonstration purposes, this block is an appropriate model (e.g., alternator), not a complete vehicle ignition.

PERFORMANCE REQUIREMENT

Assuming results from the Alcohol Level Indicator are accurate and depending on the resolution of that device, the system should function properly within ±0.001% BAC.

VII.   VERICATION

TESTING METHOD

Proper operation will be verified for simulated BACs ranging from 0.00% to .10%. The system should correctly enable or disable the Ignition block and display appropriate messages.

TOLERANCE ANALYSIS

In order for the Message Console to work as specified, the output from the Signal Processor block must be 5 V ±20%.

ADVANTAGES
➢ Cost Efficient.
➢ Effective in operation.

VIII.   CONCLUSIONS

This above test procedure has been successfully carried out and this method provide an effective way to ensure the safety of lives of others and also the property.