Adaptive Honking for No Honking Zone

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Abstract— The concept is under the field called ITS (Intelligent Transportation System) for abstract management in No Honking zones. Currently Indian cities are ranked thrice in Top 10 noisiest city in the world according to Citi quite. A Company providing sound prong solutions since 1992. The cities that rank in these are Kolkata, Delhi and Mumbai. The effects of Noise pollution are being taught from 4th Grade of schools, but we still don’t have any strong system to control it. The Rules and Regulations are not exercised as per papers, legal document PDFs and Government websites describe. The Sound Barriers and No Honking Zones are created but are hardly followed. The decibel levels of Sound are constrained in regulations but there is no tool to measure and control in real time. The people are susceptible for early hearing loss than the expected average age, Institutional disturbance, Patients in the hospital suffer. Coming to present and existing solutions, there are Sound barriers, no honking zones which are hardly paid any attention to, and people continue honking irrespective of which zone they are in.

Keywords—Noise pollution, inter-vehicular communication, honking.

I. INTRODUCTION

There is always considerable effort to reduce traffic noise in the living areas and avoid annoyance amongst the residents. The annoyance level of traffic noise may be personal but the community as a whole is quite sensitive to traffic noise especially honking by vehicles. L10 is a measure of daily exposure to traffic noise and provides an indication of how much the prevailing traffic noise will affect the exposed residents. It is calculated by averaging L10 of each of the eighteen hours between 6 am and midnight. The noise level should be less than 63dBA on average. The traffic noise involves not only the noise generated by the movement of vehicles but primarily by honking of the vehicles. Honking by vehicles has become a major cause of noise pollution in contemporary society further leading to health hazards, irritation and accidents. Vehicular Traffic adds up to 55% of total urban noise. We observed the behavior of honking horn and surveyed overall 107 vehicles. Out of which drivers of heavy vehicles were observed for maximum honking aggressive horns as 37% of the total vehicle population followed by drivers of two vehicles and car/jeep as 30% and 26%. According to the International Program of (WHO 1994), an adverse effect of noise is dined as a change in the morphology and physiology, that results in impairment of functional capacity. WHO has documented seven categories of adverse health effects of noise pollution on humans that includes hearing impairment, Interference with Spoken Communication, Sleep Disturbances, Cardiovascular Disturbances, Disturbances in Mental Health, Impaired Task Performance and Negative Social Behavior and Annoyance Reactions. Temporary noise exposure results in physiologic changes those are readily reversible. However, noise exposure of sufficient intensity, duration provokes changes that may not be so readily reversible. Noise pollution is not believed to be a cause of mental illness, but it is assumed to accelerate and intensify the development of latent mental disorders. Not only adults, but children are also adversely affected as It impairs task performance at school and at work, and decreases motivation. Reading attention, problem solving, and memory are most strongly affected by noise along with cognitive and language development and reading achievement are diminished in noisy homes. These findings suggest that more attention needs to be paid to the effects of noise originating from unwanted honking by the vehicles.

II. LITERATURE SURVEY

Author- R. K. Mishra Paper- Evaluation and analysis of traffic volume noise along has rapid transit system corridor. In this research paper The R. K. Mishra analysis on traffic volume noise. He tries to reduce noise pollution which created by the extra volume from vehicles.

Author- T. Vaidya Sagar Paper- Noise Pollution Levels in Visakhapatnam City (India). In this research paper the ambient air quality noise levels (AAQNL) at traffic junctions were 5 dBA or more than those prescribed by AAQNS for commercial zone and most of the values were found in the range of 80 +/- 10 dBA, among which 75

Author- Prof. S.M. Patil Paper- Law on Environment Some Reflections. In this research paper this author describe about the law of environment. He searches the what was the reaction of low on environment.

Author - Ising H., Kruppa B. Paper- Health effects caused by noise. In this research paper the author shows what was the effects on human health because of noise. How that bad effect was reduce.

A. Existing System

While studying existing system, we come to know that there are various systems. The existing system provide buzzer system in every vehicle. This system is useful for Hospital, Colleges, and Schools etc. The current systems are available in every vehicle; our project extends it at lower cost.

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III. PROPOSED METHODOLOGY

The ever increasing cases of ailments because of noise pollution, both physical and mental presents the direst need for a sustainable and an economically viable solution. The affordability and the efficiency of the solution system have to be optimized. The objective of this system is to present a viable alternative to these problems which also leads to an eco-friendly society.

This research work aims to provide a solution in form of an embedded module, in which inter vehicular communication is done using Radio Frequency signals with proportionate (apposite) range, frequency involved (energy requirement) and cost of equipment. The module also includes the provision of avoidance of accidents occurring because of loud music playing inside the vehicle. The smart honking system aims to develop the disincentive measure for unwanted honking. Mostly during the traffic jam, a lot of noise pollution occurs that causes irritation to the public nearby and people living in residential areas, schools and hospitals. This problem can be solved by our system efficiently as no horns would be heard in the surroundings. The source car sends RF signals which produces a beep sound inside the receiver’s car instead of horn in surroundings. The inability of the driver to hear the horn is because of the loud music in the car. Integrating with the stereo system of the car, that automatically pauses stereo system and allows the beep to be heard resulting in avoidance of road accidents. Along with the beep, a visual signal appears that assist even the person with hearing impairment to drive easily.

There is provision of switching to conventional horn to deal with certain situations such as sudden appearance of humans or animals via dual purpose switch. Hence in this chapter literature survey is done. We are trying to improve existing system with our additional design and we have described overall idea about the existing system and our proposed system.

IV. SYSTEM ARCHITECTURE

The figure 2 shows the architecture module of system. The architecture shows how Adaptive Honking for No Honking system is work. In this system is mainly use Arduino board, Wi-Fi module, and Piezo buzzer. System is connected through a Wi-Fi module. The vehicle Wi-Fi module is connected to building Wi-Fi module to reduce a noise intensity for reduce noise pollution.

V. RESULT

With this system we were able to achieve a range of 40m for vehicles. The objective of this system is to present a viable alternative to these problems which also leads to an eco-friendly society providing viable solution affordable to both consumer and Government.
CONCLUSION

The various effects related to this problem including stress, depression and other physical and mental ailments which needs at most attention from the society are directly tackled by uprooting their main cause. Moreover, Priority Emergency Vehicle System has a humongous potential to save many lives caused by the delay of these to reach their required destination. The output of this system has result in an embedded module which shall benefit the residents of societies located near the high traffic roads, students studying in schools located in the vicinity of busy roads, patients admitted in the hospitals located on the roadsides and people of various professions/occupations. The alternative solution of noise absorbers requires huge capital and manpower for repair and surveillance. The need for costly noise absorbers is obviate by this system. The accidents that are caused due to loud music inside the vehicle, which inhibits the ability of the driver to hear are mitigate by this system.

FUTURE SCOPE

This module can be improvised for the two wheeler vehicles by installing the low intensity sound buzzer in helmet which in turn, would make helmet necessary. Power from the microcontroller already installed in the car; used for various operations like Power Locking System could directly be interfaced with this system making it more power efficient.

References