# SMART PATROLLING VEHICLE

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*Abstract:* **Patrolling vehicles can patrol periodically in the designed area to ensure the safety like men do. The proposed vehicle cannot only save manpower, but also ensure the performance without mistakes caused by man. It is different from the traditional patrolling system which is limited by the manpower and the fixed camera positions. To improve such situation, this paper proposes for safety of alcohol detector and automatic license reader. The position of smart patrolling vehicle vehicles can be detected by the RFID reader as a feedback and be shown on the PC screen and smart phone. The recorded images can be also transmitted back to the server via Wi-Fi system for face tracking and discriminating analysis. On the other hand, the self-propelled vehicle patrolling routes can be modified by the Android smart-phone remote-control module. When some defined events occur, the build-in MSN module will notice users by sending messages to PC and smart phone. Experimental results are given in the paper to validate its performance.**

*Keywords*: **Efficient way, excellent potentials, Future benefits, Research and Development, Versatile usage.**
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## 1.INTRODUCTION

Smart patrolling vehicle is a vehicle has advance technologies improved vehicle which has many features like alcohol detector, automatic license reader, surveillance camera and PUC detector. Alcohol detector is a one type of sensor which sense the alcohol consumed by the driver and this single send to the sirens through alcohol detector sensor and sirens start sounding. Similarly the automatic license reader are provided to scan the number plate of the vehicle and check the license issued are not, and also pollution under control (PUC) detector are provided to sense the pollution of vehicle. This vehicle is totally lased with surveillance camera which are provide at outer of the vehicle for observation outer side of the road which cannot detected by necked eye this type of object can be easily detected by surveillance camera.As the incidents of theft grew more frequent, the applications of security systems are more popular than ever to prevent the damages caused by theft whether at home or elsewhere. The traditional security system gives some protection to the situation but still has some dead zone that cannot be monitored. Therefore, this paper proposes mobile security monitoring system to improve the security of traditional one. A smart patrolling vehicle acts as a security patroller in the security system, which can monitor those dead zones of the traditional fixed surveillance system. The remote monitoring capabilities can also be enhanced by using the wireless network.With the proposed combined scheme of the paper, the security of indoor surveillance will be upgraded. The smart patrolling vehicle will give more information than the traditional security system. Experimental results are also provided to validate the performance of the proposed system.

## 2. Component used for smart patrolling vehicle.

- Automatic license reader
- Alcohol detector
- High output LED
- Surveillance Cameras
- Wearable Video Cameras
- High output LED
- Pollution under Control Detector

### 2.1 Automatic license reader

The ability to drive through an area and search plates for stolen or suspect vehicles is priceless. I used to use a Police Explorer to run plates to look for stolen vehicles. Now there's a hardware/software solution designed to not spill something in your car. Police vehicles in NSW are capable of reading up to six number plates in a second thanks to a high-tech number plate reader first introduced in 2013. Three cameras mounted on the car's roof link to a computer running optical recognition so ware and a database of stolen, unregistered or suspect vehicles, which sounds an alarm every time it finds a match. The data is linked to a laptop computer and mobile data terminal fitted in each vehicle. Automatic license reader are provided to scan the number plate of the vehicle and check the license issued are not, can use existing closed-circuit television, road-rule enforcement cameras, or cameras specifically designed for the task. ANPR is used by police forces around the world for law enforcement purposes, including to check if a vehicle is registered or licensed. It is also used for electronic toll collection on pay-per-use roads and as a method of cataloguing the movements of traffic, for example by highways agencies. Automatic number plate recognition can be used to store the images captured by the cameras as well as the text from the license plate, with some configurable to store a photograph of the driver. Systems commonly use infrared lighting to allow the camera to take the picture at any time of day or night ANPR technology must take into account plate variations from place to place. Concerns about these systems have centered

on privacy fears of government tracking citizens' movements, misidentification, high error rates, and increased government spending. Critics have described it as a form of mass surveillance.



## 2.2 Alcohol detector

The breath alcohol content reading is used in criminal prosecutions in two ways. The operator of a vehicle whose reading indicates a BAC over the legal limit for driving will be charged with having committed an illegal per se offense: that is, it is automatically illegal throughout the United States to drive a vehicle with a Breath Alcohol Concentration (BrAC) of 0.08% or higher. One exception is the state of Wisconsin, where a first time drunk driving offense is normally a civil ordinance violation. The uniformity is due to federal guidelines that states choose to adopt as motor vehicle laws are enacted by the individual states. It is said that the federal government ensures the passage of the federal guidelines by tying traffic safety highway funds to compliance with federal guidelines on certain issues, such as the federal government ensuring that the legal drinking age be the age of 21 across the 50 states. In earlier years, the range of the threshold varied considerably between States.

The breath analyzer reading will be offered as evidence of that crime, although the issue is what the BrAC was at the time of driving rather than at the time of the test. Some jurisdictions, such as the State of Washington, now allow the use of breath analyzer test results without regard as to how much time passed between operation of the vehicle and the time the test was administered. The suspect will also be charged with driving under the influence of alcohol (sometimes referred to as driving or operating while intoxicated). While BrAC tests are not necessary to prove a defendant was under the influence, laws in most states require the jury to presume that he was under the influence if his BrAC is found and believed to be over 0.08 (grams of alcohol/210 liters breath) when driving. In California, this is once again demonstrated by California Vehicle Code Section 23152(b) and Cal-Crim 2111, which states: "If the People have proved beyond a reasonable doubt that a sample of the defendant's (blood/breath/urine) was taken within three hours of the defendant's [alleged] driving and that a chemical analysis of the sample showed a blood alcohol level of 0.08 percent ormore, you may, but are not required to, conclude that the defendant's blood alcohol level was 0.08 percent or more at the time of the alleged offense." This creates a rebuttable presumption, which means it is presumed, but that presumption can be rebutted if a jury finds it unreliable or if other evidence establishes a reasonable doubt as to whether the person actuallydrove with a breath or blood alcohol level of 0.08% or greater. This would not apply to States that have done away with the presumption, such as the State of Washington, as previously referenced.

Infrared instruments are also known as "evidentiary breath testers" and generally produce court-admissible results. Other instruments, usually hand held in design, are known as "preliminary breath testers" (PBT), and their results, while valuable to an officer attempting to establish probable cause for a drunk driving arrest, are generally not admissible in court. Some states, such as Idaho, permit data or "readings" from hand-held PBTs to be presented as evidence in court. If at all, they are generally only admissible to show the presence of alcohol or as a pass-fail field sobriety test to help determine probable cause to arrest. South Dakota does not permit data from any type of breath tester, and relies entirely on blood tests to ensure accuracy.

Historically, states initially tried to prohibit driving with a high level of BAC, and a BrAC test result was merely presented as indirect evidence of BAC. Where the defendant had refused to take a subsequent blood test, the only way the state could prove BAC was by presenting scientific evidence of how alcohol in the breath gets there from alcohol in the blood, along with evidence of how to convert from one to the other. DUI defense attorneys frequently contested the scientific reliability of such evidence. In response, many states like California subsequently modified their BAC statutes so to directly prohibit a certain level of alcohol in the breath as an alternative to a prohibited level of BAC. In other words, the breath test result itself, the BrAC level, became the direct predicate evidence for conviction. In other states, such as New Jersey, the statute remains tied to BAC, but the BrAC results of certain machines have been judicially deemed presumptively accurate substitutes for blood testing when used as directed.
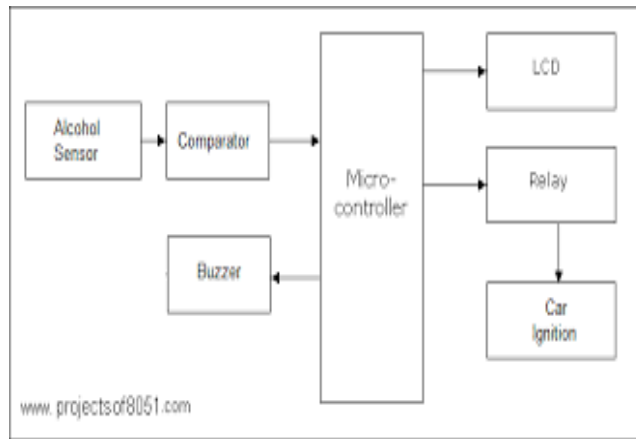
## 2.3 Surveillance Cameras

This vehicle is totally lased with surveillance camera which are provide at outer of the vehicle for observation outer side of the road which cannot detected by necked eye this type of object can be easily detected by surveillance camera. Forces may operate surveillance cars. These cars can be marked or unmarked, and are there to gather evidence of any criminal offence. Overt marked cars may have CCTV cameras mounted on the roof to discourage wrongdoing, whereas unmarked cars would have them hidden inside. This type of vehicle is particularly common in the United Kingdom. In the United States, some police departments' vice, narcotics, and gang suppression units utilize vehicles that contain no Identifiable police equipment (such as lights, sirens or radios) to conduct covert surveillance. Some police vehicles equipped with surveillance are Bait cars which are deployed in high volume car theft areas.
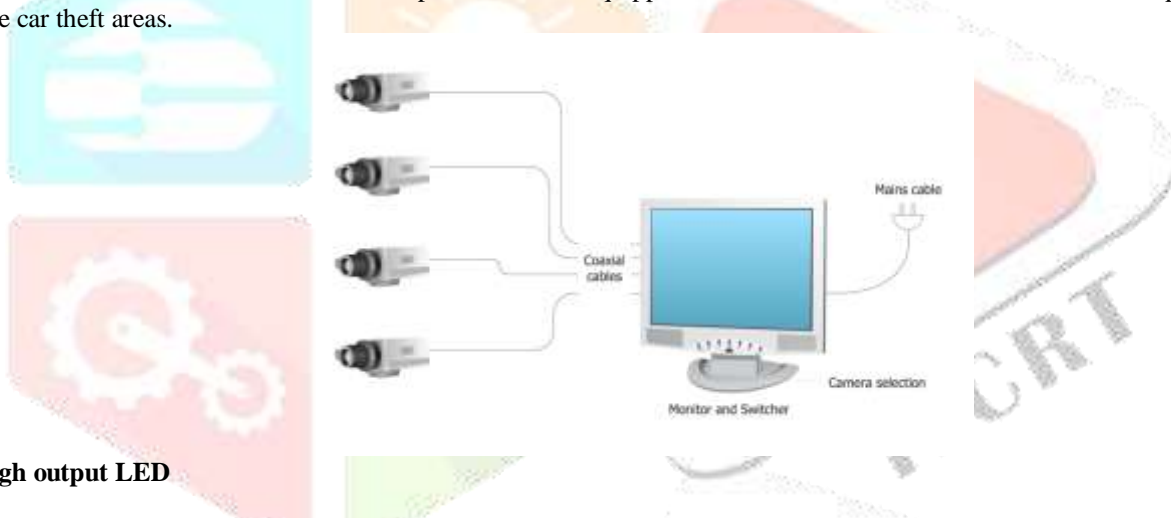


## 2.4 High output LED

Although the technology for LEDs has existed for decades, the current high out put white LED is a very recent innovation. This innovation all but revolutionized tactical lighting for patrol use. The forerunner to the white LEDs found in cutting edge stroking as lights came from research done by Shuji Nakamura, who developed a high brightness blue LED. Originally thought to be useful only as a replacement for incandescent indicator lights, LED devices became popular overnight.

In this decade, Cree Inc. carried the torch, literally. Cree began producing LED devices mounted on a base which several times more lumens per watt than their incandescent counterparts. This put LEDs into the realm of tactical use. As high output LEDs entered the market, new applications were inevitable. Probably the best of LED lighting is the fact that an LED does not have a delay in starting up. That is, an incandescent light has a faster rise time than an LED. If one were to compare an LED with a standard light bulb in a high speed the LED would reach its peak brightness quicker. What does this mean? It means increased safety. A handheld strobing device would be unheard of without the LED. Oh yeah, I know, photography strobes. They've been around since news photographers quit using black powder. However, the white LED has increased their made them practical. There are some emerging studies which suggest that there is a decreased driver reaction time and alertness when LED signals are used. The brain can recognize the abruptness of the LED's activation, compared to other light sources, even if the conscious mind cannot recognize the subtle deference. It creates a slightly higher sense of urgency, which can cause a higher state of alertness. Although there is not a lot of data out there, research will likely determine that LED lightbars are more effective. Even if they weren't, the new ones definitely have a lower probe. The white LED has opened the door for brighter lights at much less power consumption. I can't wait for the next lighting innovation.

## 2.5 Wearable Video Cameras

The current trend of equipping officers with video and audio recording has solicited mixed emotions from many officers. I ran an audio recorder in the previous decade, using a bulky tape machine in my pocket. I can recall several times where a witness about something that did not agree with I told the court It was simply a matter of playing the miniature cassette I had booked into evidence to resolve the issue. The new wearable video cameras have features like video remote streaming, GPS tagging and discreet form factors. This is light years ahead of the stuff I used.

## 2.6 Pollution under Control Detector

The incomplete combustion in the engine of a vehicle leads to emission of different gases contributing to increase in the pollution and adversely affecting the environment. Detection and control of these gases is an important area of work. This emission from vehicles cannot be completely avoided but, it definitely can be controlled. Now a day's accidents are common reason for deaths. These are critical things to control so here we come up with a concept to reduce pollution and detect the location of accident using GPS. As a solution to the above problems we aim to build an automated control system for emission level control of vehicle and accident place detection. Smoke detector is used to detect the carbon percentage in the smoke released by the vehicle due to combustion of fuel in it. Smoke detector is fixed at the end of the exhaust of vehicle from where smoke is released into the environment. The smoke detector detects carbon and gives it to the Microcontroller to check the maximum percentage of carbon content in the smoke released by vehicles. Temperature sensor can be used to sense the temperature in the vehicle. So the controller checks the percentage of carbon and temperature, if it exceeds the threshold level the system gets triggered and the engine comes to hault state and then it sends SMS about this to the nearby pollution control office through GSM.
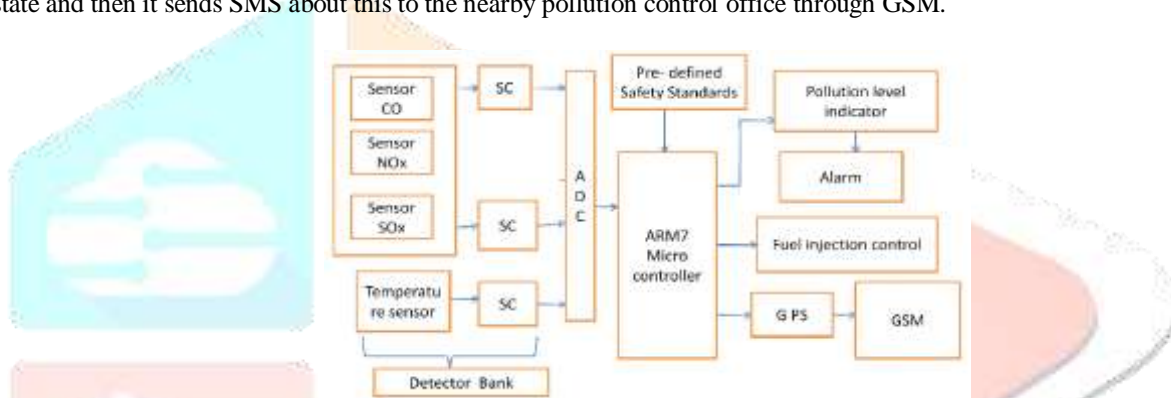


## CONCLUSIONS

In this paper the a smart patrolling vehicle that can detect humps, potholes and theft, help deal with traffic chaos and provide parking assistance and can be applied in the real world. It can work in bad weather condition too. Overall, such a car will eliminate the major issues encountered and hence make driving a pleasant experience. Since, RF signal get blocked or get attenuate if more than one transmitter is there which can be reduced by changing the frequency of RF for different set of units. Here the sensible distance by ultrasonic sensor is less i.e. 3 meter for both pot and speed breaker, so it can be further increase by using laser finder sensor whose range is more the 1 km. Traffic chaos assists can be more improved by using camera interface with Arduino.

## 4. ACKNOWLEDGEMENT

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