An efficient approach of Bomb Detection Using Internet of Things

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Abstract—When a person or vehicle carrying any explosive items there should be a sensor to detect those items those can be placed at any junctions, traffic police, toll gates such that it makes a long alarm that specifies a particular vehicle or a person carrying explosive items the sensor should be activated with in a particular distance.

Keyword —bomb, sensor, iot, aurdino.

I.   INTRODUCTION

IOT means making some of the things that we are using has the ability of Internet access (smart things). Anything that can be joined to it processing unit (microcontroller) and connected to the Internet is considered as things in the world of IoT. In IoT, the interconnected products should always be low-cost, so that we can flood the planet with IoT devices. The first step in building an iot device is to figure out how it will communicate with the rest of the world. For example: A factory would need a large number of connect

One of the most widely used mobile OS these days is **ANDROID**. **Android** does a software bunch comprise not only operating system but also middleware and key applications. Android Inc was founded in Palo Alto of California, U.S. by Andy Rubin, Rich miner, Nick sears and Chris White in 2003. After original release there have been number of updates in the original version of Android. Sensors and actuators scattered over a wide area. Android applications are written in java programming language. Android is available as open source for developers to develop applications which can be further used for selling in android market. There are around 200000 applications developed for android with over 3 billion+ downloads. Android relies on Linux version 2.6 for core system services such as security, memory management, process management, network stack, and driver model.

Nowadays a lot of attention is being paid to the development of methods and instrumentation for the detection of explosive.Vapor detection refers to gas-phase molecules emitted by a solid or liquid explosive. The concentration of explosives in the air is related to the vapor pressure of the explosive material land to other factors, such as the duration of the presence explosive material in the given location, its packing, temperature, air circulation in the location.

The design using a gas sensor—A metal detector and MQ-2 gas sensor is a micro-controller based design that enables the user to detect any metal or explosive gas that can be carried by any personnel. The design can be turned On and Off depending on what the user wishes. Since all types of metals are detected as for gases, all explosives aredetected, so as butane, methane, propane, alcohol and hydrogen.

II.   LITERATURE SURVEY

The term "Internet of Things" (IoT) was first used in 1999 by British technology pioneer Kevin Ashton to describe a system in which objects in the physical world could be connected to the Internet by sensors.12. By the late 1970s, for example, systems for remotely monitoring meters on the electrical grid via telephone lines were already in commercial use.14 In the 1990s, advances in wireless technology allowed "machine–to–machine" (M2M) enterprise and industrial. In the 2000s Internet connectivity became the norm for many applications and today is expected as part of many enterprise, industrial and consumer products to provide access to information

The objective behind making this android was to bring the functionalities of a network service provider onto a mobile device. So while surveying as to on which platform or rather operating system the project has to be implemented ,we selected android for the following reasons: Android is an open source platform, Supports multifunction   It Provides rich tools to make interactive application. Downloading the software's required for making the application are absolutely free.

Cloud computing has been cited as 'the fifth utility' (along with water, electricity, gas, and telephone) whereby computing services are readily available on demand, like other utility services available in today's society [Buyya,

Yeo, Venugopal, Broberg, and Brandic, 2009]. This vision is not essentially new. Dating back to 1961, John McCarthy, retired Stanford professor and Turing Award winner, in his speech at MIT's Centennial, predicted that in the future computing would become a 'public utility' [Wheeler and Waggener, 2009]. In 1969, Leonard Kleinrock, one of the chief scientists of the original Advanced Research Projects Agency Network (ARPANET) project which seeded the Internet, said: 'As of now, computer networks are still in their infancy, but as they grow up and become sophisticatedarduino is an open-source platform used for building electronics projects. Arduino consists of both a physical programmable circuit board (often referred to as a microcontroller and a piece of software, or IDE (Integrated Development Environment) that runs on your computer, used to write and upload computer code to the physical board.

The Arduino platform has become quite popular with people just starting out with electronics, and for good reason. Unlike most previous programmable circuit boards, the Arduino does not need a separate piece of hardware (called a programmer) in order to load new code onto the board – you can simply use a USB cable. Additionally, the Arduino IDE uses a simplified version of C++, making it easier to learn to program. Finally, Arduino provides a standard form factor that breaks out the functions of the micro-controller into a more accessible package.

III. METHODOLOGY

The method of working of bomb detection using gas censor and metal detector consist of following requirements

- MQ2 gas sensor
- Metal detector
- Gsm(900 sim)
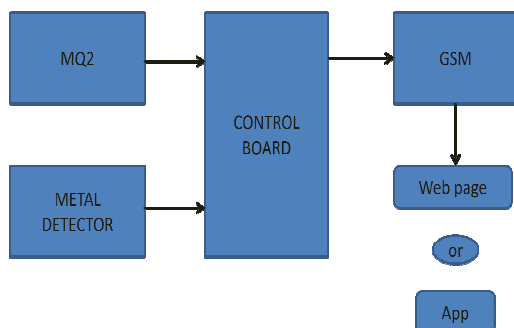
The above figure shows iot bomb detection model connected between different parts like gsm, arduino board ,web page ,metal detector,control board etc. It

provides a solution that has high flexibility, hardware-like throughput, low power consumption, in addition to ease of programmability. A architecture for is based on a reconfigurable instruction cell array (RICA). The architecture targets the IEEE 802.11g standard that includes Viterbi decoding, which is a key performance bottleneck

In the present day scenario we are facing many threats by bomb blasts so our project is to prepare an unmanned vehicle which will detect the bomb it will not only detect the bomb but also position of bomb by using gps module and the position of bomb will intimated to the specific person by message through gsm module. We are interfacing lcd and buzzer to control will give us acknowledgement. **GSM**/GPRS **module** is used to establish communication between a computer and a **GSM**-GPRS system. Global System for Mobile communication (**GSM**) is an architecture used for mobile communication in most of the countries. Global Packet Radio Service (GPRS) is an extension   of

 GSM that enables higher data transmission rate.
GSM modem is used for transmitting and receiving the data. SIM 300 is a tri- band GSM/GPRS engine. It works on various frequencies i.e. EGSM 900MHz, DCS 1800MHz and PCS 1900MHz.

GSM Module is basically a GSM Modem (like SIM 900) connected to a PCB with different types of output taken from the board – say TTL Output (for Arduino, 8051 and other microcontrollers) and RS232 Output to interface directly with a PC (personal computer). The board will also have pins or provisions to attach mic and speaker, to take out +5V or other values of power and ground connections. These type of provisions vary with different modules.

Gas Sensor

Gas sensors are available in wide specifications depending on the sensitivity levels, type of gas to be sensed, physical dimensions and numerous other factors. This Insight covers a **methane gas sensor** that can sense gases such as ammonia which might get produced from methane. When a gas interacts with this sensor, it is first ionized into its constituents and is then adsorbed by the sensing element. This adsorption creates a potential difference on the element which is conveyed to the processor unit through output pins in form of current.

IV.   CONCLUSIONS

The proposed automatic explosive detection system automatically detects the explosive elements without any human intervention. There are many advantages with the proposed system when compared with the traditional detection techniques. The advantages include less cost, low power consumption and less analysis time. By this proposed system the exact location of the IED can be detected.

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