IEEE Projects 2013

1. **GPS-GSM Based Public Transportation System**

   This project proposes and implements a solution for enhancing public transportation management services based on GPS and GSM. The system consists of three modules BUS Station Module, In-BUS Module, User Module equipped with PC and GSM modem. Here GPS will measure the location of the vehicle with RTC timer part to indicate the exact time of the location and a pair of IR sensors will be used to display the current status of the passengers in the bus (One pair for incrementing and other pair for decrementing). Here Data received by the PC via GSM) module can be transmitted to the users.

2. **Green Bee**

   This system continuously monitors different parameter from the sensors and automatically controls the different parameter. This system consists of "Humidity Sensor", "Temperature Sensor", "Moisture Sensor", "Light or LUX sensor" that will maintain the environmental condition. If there is any sudden drift in the parameter of the things cannot be controlled by "Green Bee" it immediately alters with a buzzer alarm with SMS Alert.

3. **Road Follower Truck**

   The road follower truck is a robot in actual. It follows the road without a driver. We have fixed INFRA RED sensors on fore side on the robot. The principle of sensors is that black colour will normally absorb the light where other colors will normally reflect the lights.

4. **UGV For Military with Zigbee Control From with Wireless Camera Unit**

   In this project we deal with robotic ARM with 5 axes along with real time video and audio update from far distance. ARM can be controlled through wirelessly with the

help of zigbee unit from the remote computer. In the remote unit the person can view the real time video and audio and control the 5 axes ARM in any direction. Five axes of robotic movement are at your command with the wireless.

5. **An RFID based Reminder System for Smart Home**

The main aim of this project isproviding a reminding mechanism for the user in a smart home environment. The purpose of this project is, when people tend to forget things when they leave home for work or school. It's automatically reminding the user what he or she has forgotten to bring along with them.

6. **Design of Land Slid Warning System**

The project "Design of Land Slid Warning System" Renesas microcontroller ,GSM, Alphanumeric LCD, PC, ZigBee, Buzzer, ultra sonic Sensor.When the landslide occurs the buzzer will beep, and that data is send by wireless sensor networks to the monitoring place. The monitoring center is based on the PC monitoring platform, it have friendly interface, and alarm system etc.

7. **The Real time Temperature Measuring System for Joint less rail**

In this project the temperature data collected from sensors and send to the central department by GSM modules in the way of SMS. GSM module of the central Department receives the data and transfer to LCD through microcontroller. If the temperature is out of limits, it will send SMS or call people related for monitoring and alarm the temperature of the joint less rail.

8. **Simulation of Earth Quakes and Tsunami through GSM Network**

Simulation of Earthquakes and tsunami through GSM network to develop this project we are using ADC, Accelerometer, GSM,LCD(16x2), reset, buzzer and Micro ControllerR8C25. This system simply monitors the earth vibrations and generates an alert signal when the level of earth vibration crosses a threshold. When earthquake

occur the signal is generated and the accelerometer is activated and the signal is send through GSM to Micro controller. The signal has to be generated quickly as possible. This may result in the possibility of generating false alarm.

9. **Secured Wireless Communication for Industrial Automation and Control**

The approach to Zigbee Based Wireless Network for Industrial Applications standardized nowadays. In this paper, we have tried to increase these standards by combining new design techniques to wireless industrial automation. The personal computer based wireless network for industrial application using Zigbee can be adopted at micro and macro Industries, it has various types of Processors and Microcontrollers. Here Microcontrollers, Temperature Sensors, Zero crossing detector, Voltage regulators are used.

10. **More Efficient Home Energy Management System Based on ZigBee Communication and Infrared Remote Controls**

This paper describes more efficient home energy management system to reduce power consumption in home area. We consider the room easily controllable with an IR remote control of a home device. The room has automatic standby power cut-off outlets, a light, and a ZigBee hub.

11. **Design and Implementation of Pyroelectric Infrared Sensor based Security System**

Security systems are necessary during any emergencies that occur at banks, houses etc. Hence in this project, a security system with a feature of motion and password detection is implemented. Using GSM the administrator will be informed about the people moving into the secured places, by sending an SMS to his mobile. At his work place, he can take a required action, which saves time during emergencies.

12. **Design and Implementation of a Home Embedded Surveillance System with Ultra-Low Alert Power**

In this project home embedded surveillance system with ultra low power we can save power where as traditional surveillance system suffer from an unnecessary waste of power & short comings of memory conditions in absence of invasion.

13. **Density based Traffic Signal Control & Intelligent Ambulance for City Traffic with Zigbee communication**

In this project all the IR receivers placed near the roads are connected to one controller & the traffic signals are connected to another controller. The IR receivers signal information and send to the signal connected controller using Zigbee. Both the controller will communicate with each other using pair of Zigbee. This will decide the timing of the signal light. If there is an ambulance in the road it will detect by the sensor and increase the green light time duration of that particular road.

14. **Design and Implementation of a Bi-directional Power Converter for Electric Bike with Charging Feature**

In this project we run a motor through motor driver which is actuated by the controller. That motor is coupled by another motor. Due to coupling the other motor rotates and generates back emf. This genearated back emf is boosted and applied to battery to charge the battery.LCD is used to display the battery and back EMF voltages.

15. **Detection of earthquake using accelerometer**

Simulation of Earthquakes and tsunami through GSM network to develop this project we are using ADC, Accelerometer, GSM,LCD(16x2), reset, buzzer and Micro ControllerR8C25. This system simply monitors the earth vibrations and generates an alert signal when the level of earth vibration crosses a threshold. When earthquake

occur the signal is generated and the accelerometer is activated and the signal is send through GSM to Micro controller. The signal has to be generated quickly as possible. This may result in the possibility of generating false alarm.

16. **Real Time Student Verification System Based on SMS Request**

In this system if any parent want to know the progress of their children's they can sent message to the collage phone number by typing their STUDENTS ID (identification number). Whenever modules receive the message it going on to check data base in microcontroller memory for students ID .if any ID matched then it start for checking parents phone number and if their parents phone number matched then microcontroller sends data to that phone number regarding to their children's information.

17. **Single axis Solar Panel Controller and Power Optimization**

This project is mainly designed to control the solar panel automatically, maintains face of the solar panel towards the sun. This is done by controlling the mechanical movement of the solar panel. Usually sun rises at east and sets at west. In ordinary system, if it faces towards east then it cannot change the direction towards sun during sunset. Because of this reasons solar panel may not get sufficient sun rays to work.

18. **Touch Screen based ROBOT Control with Speech Alert**

This project is mainly applicable for medical field. Here a transmitter unit is placed near patient. The patient is used to move the robot and also send information to the doctor by using touch screen keypad. In some situation the patient is not able to approach doctor. In such cases patient send the robot near doctor using touch screen keypad using left, right, forward and backward buttons. In keypad for each number one predefined voice message is assigned. If the patient presses any number that predefined voice message reaches the doctor.

19. **A Real Time Paddy Crop Field Monitoring System based on Zigbee Network**

The purpose of this project is to implement a highly enabled paddy crop field monitoring system using ZIGBEE Wireless Sensor Network without human interactions.. This paper proposed idea about monitoring the crop field area without human interaction.Wireless sensor network (WSN) consists of a large number of low cost sensor nodes which are deployed in the sensing area. They can sense, sample and process the information gathered from the sensing area, and transmit it to the observer.

20. **Green Home Energy Management System Through Comparison of Energy usage Between the same kinds of Home Appliances**

The purpose of using this project based on HEMS technology is which is used to reduce and manage home energy use. A typical HEMS just shows the energy consumption of the whole home and home appliances. Users cannot figure out how efficient a home appliance is, compared to the others. So it is necessary to compare the energy usage of home appliances to that of the same kinds of home appliances. In this system home appliances areconnected to the electrical outlets. The electrical outletshave a function of energy measurement of homeappliances and the capability of ZigBee communication. The HEMS inthe home server gathersthe energy information from the electrical outlets anddisplays hourly, daily, weekly, and monthly energy usage of home appliances with this a user can figure out detailed energy information.

21. **Development on Gas Leak Detection and Location System Based**

The aim of the project is to develop a gas leak detection and location system for the production safety in Petrochemical Industry. The purpose of the project is to monitor gas leakage parameter. When they exceeds threshold, intimation is given to the nearby control section including readings of parameter and location of the gas leakage.

IEEE Projects 2010

1. **Adding New Functions to the Remote Airfield Lighting System**

   This project "Adding New Functions to the Remote Airfield" will be useful for power saving at the flight run runways and will be useful for safe landing of the flights by showing the correct runway path with high intensity LED's. In this project ARM7 Microcontroller is used.

2. **Intelligent Traffic Controller**

   This controller not only controls the traffic in a sequential manner by giving equal time to all the sides but also prevents pollution on the signals. When red signals are turned to green and vehicle are started, engine emits lot of black smoke that is much concern to all of us, standing near to signals or staying near to signals , to avoid this we have planned to start an exhaust fan which is fixed below the roads with certain arrangements on the all sides of crossing to suck the black smoke right away and leave it on to high enough into sky

3. **Finger Print based ATM Authentication & Money Management System**

   This system consist of a finger print scanner which is attached to the ATM machine and all the money transfer can be achieved only by have the concern person finger print. As we all know that finger print is unique for the entire individual in this word. That is no human being can have similar finger print in this work. Considering to this fact the ATM can be secure by the finger print hence only the concern per can access the money in their bank.

4. **Smart Solar Tracking System**

   This project is mainly designed to control the solar panel automatically, maintains face of the solar panel towards the sun. This is done by controlling

the mechanical movement of the solar panel. Usually sun rises at east and sets at west. In ordinary system, if it faces towards east then it cannot change the direction towards sun during sunset. Because of this reasons solar panel may not get sufficient sun rays to work.

5. **Transformer Monitoring System Using GSM**

This system uses GSM Technology to transfer the information or the parameter from the transformer to the substation wirelessly. This advanced system helps to user to warn the substation if there is and failure, an increase of voltage, temperature and also current via SMS. And also the concern person can immediately shutdown the system from the substation by just sending an SMS to the unit placed near the transformer.

6. **Vision-Based Automated Parking System**

This project describes an approach to overcome a situation of monitoring and managing a parking area using a vision based automated parking system.

7. **Design and Application of Mobile Embedded System for Home Care Applications**

The purpose of this project is to bio telemetric system is embedded system of distributed nature aimed at monitoring of patient's vital functions, among others heart rate and carbon dioxide saturation. There is need to track other values as well - body and ambient temperature, patient's posture in monitored space.

8. **Design of a Hybrid RFID GPS Based Terminal System in Vehicular Communication**

The purpose of this project is to integrates RFID identifying and GPS tracking was proposed and implemented, which can enhance automatic management, information security, real-time trace and location, and anti-theft in digital logistics management Experimental results show that the vehicle terminal system can identify quickly mobile supply chain assets, trace and locate mobile equipment in real time, reduce loss and theft and enhance management control as well.

9. **Mobile Monitoring System for Smart Home**

The main aim of this project is monitoring of smart home remotely and providing security when the user is away from the home.The Purpose of this project is to provide controlling of home appliances remotely and will also enable home security against instruction in the absence of home owner by using GSM and zigbee technologies

10. **Remote Sleep Monitoring and Medical Alarm System**

In this project, we are sensing the pulse rate of wrist. If the pulse is above/below the normal pulse rate, then the pulse rate sends the sms through the gsm modem &simulataneously it sends to the receiver through the zigbee receiver and gives the alarm. If you want the pulse rate at any time of the person then sends the message to the GSM modem then GSM modem will transmit the pulse rate as a message to the person.

11. **Wireless Security Control System**

The aim of this project is to develop a wireless security control system for smoke and fire detection.The purpose of this project is to detect the fire and transmit information by using wireless network.

12. **ZigbeeElectronic Energy Meter With Instant Billing**

In this project we have shown the concept ofpostpaid energy meter which will automatically sense the energy used in the home and update the reading in EEPROM and LCD display.In the proposed work, the front end is user friendly and one can work on this with minimum knowledge of computers and can read the meter by using a simple hand held device with Zigbee and thermal printer.

13. **Patient Vital Signs Monitoring using Wireless Body area Network**

The aim of this project is design a system to monitor the vital signs of a patient by using the compact bio-medical wireless sensors.By using this project we can continuously monitor a priority based patient health conditions during unfortunate seriousness of the patient and give the service by wireless transmissions between medical devices and continuously monitor the core temperature and carbon dioxide concentration.

14. **Role of Wireless Sensor Networks in Forest Fire Prevention**

The main intention of this project is to design a system,which proposed a scheme to realize the intellectualized management system for prevention of fire in remote forest areas wirelessly. In this project using a wireless sensor network to collect the information of forest fire-prone sections for forest fire, wireless sensor nodes constitute a "smart" monitoring and control network through the self-organization and transmits the messages to the control center through the network, thus we can achieve the remote control of the forest fire.

IEEE Projects 2009 & Before

1. **Zigbee Based Intelligent Helmet for Coal Miners**

The main objective of this project, a cost effective ZigBee-based wireless mine supervising system. This scheme used intelligent helmets as voice terminal and ultra-low-power nodes of wireless sensor network. In this helmet aZigBee wireless sensor networks, gathering parameters from underground timely and quickly. Moreover miners can also exchange information from control centre through wireless speech communication.

Design of Intelligent Traffic Light Controller Using GSM & Embedded System

This particular project is designed for the cities with heavy traffic. To monitor the density of the traffic, we will be keeping the few IR Sensors in the besides the road and depends upon the signals from the sensors the timing of the traffic signals will be changed.

2. **3 Dimensional Password For More Secure**

   Current authentication systems suffer from many weaknesses. Here in this system uses the very new technology called as Accelerometer that can provide with the 3 Dimensional movement data. This system consists of a wearable glove unit. When the user need to provide with the password the user need to wear the 3-D unit into his/her hands and provide with the exact 3-D positions to unlock or to give the authentication to the system.

3. **Vehicle Information Communication Safety Combined With Mobile RFID System**

   The aim of this project is to provide the vehicle information and provide security using RFID and GSM. The purpose of this project is to develop of vehicle tracking systems and systems providing information to travelers in vehicles through wireless means. Recently, RFID is a hot technology that helps to identify the animate or inanimate.

4. **GSM based wireless home appliances monitoring and Control System**

   The main aim of this project is to develop a system, which uses Mobile technology that keeps monitoring of the various appliances, and will control the operation of these appliances with respect to the signal sent by the mobile. The purpose of this project is to provide an automation system to continuously monitor and control different appliances automatically and to gain the remote access of different units using the GSM technology.

5. **Automatic power meter Reading using GSM Network**

   The main aim of this project is to monitor and record the power meter reading using GSM Technology.. In this project we have two sections.In section 1 For measuring energy consumed by the user we are going to use one digital energy meter, at the

same time as it uses 1unit the count will be displayed in LCD And that particular data is stored in the eeprom. In section 2 (electricity board section) this section is placed in electricity board. Here we are using the microcontroller so internally rtc is there in this controller. By using this rtc hourly once we are sending the request sms to the section 1 to get the information about power meter reading

6. **Embedded real time Damage Detection and Identification Algorithms in Wireless Health Monitoring System for Smart Structures**

The aim of this project is to identify and monitor the damage detection of structures by using wireless sensor network. This system is based on a structure that can acquire the sensors such as accelerometer, pressure and displacement information, and transmit that processed information to the control section. The purpose of the project is to know the structural information of a structure for the early identification and detection of damage by using wireless network.

7. **Microcontroller based Automation of Variable Electronic Speed Governor**

The main aim of this project is to present a conceptual model of a microcontroller based variable electronic speed governor that can be implemented to control the speed of any vehicle depending on the local speed limit. Consider a city or town can be divided into physical zones which are classified according to different speed ranges. A transmitter is placed at all exit and entry points of the interface of any two zones that transmits a message signal at carrier frequency, indicating the upper limit value of the zones' speed range into which the vehicle is entering at that moment, to the receiver which gives the message as an input to a preprogrammed MICROCONTROLLER embedded within the automobile which compares the speed of the vehicle measured by a sensor at the maximum allowable speed and automatically regulates the speed of the vehicle.

8. **Increasing Safety of Bomb Disposal Mission a Body Sensor Network Approach**

The main aim of the project is to implement a wireless communication system in the field of electronics by which we can collect the data from the person section where sensors are placed. The purpose of this project is to increase the safety of operatives in missions through monitoring, fusion of health information, and remote alerts.In this project there are two sections. The first section is person section and another section is base section. In the person section the temperature sensor will sense the body temperature of the person and sends to the micro controller.person position is recognized through mems technology, mems can take that information and sending to micro controller. Microcontroller displays this information in the LCD and in the PC. And at the person section if the person feels hot at that time automatically dc motor is on to cool her body.

Finger Print Based Projects

1. **Two stage attendance punching system with Finger print Scanner and RFID**

This system consist of RF card reader which readers the information from the RF ID and displays the name of the concern person. Once the RF ID conformation is passed the user need to undergo finger print scanning to complete the procedure of attendance. This system also calculates the total attendance and also makes a track on late coming. This system has an inbuilt RTC to track the time of attendance.

2. **Finger Print based Digital Voting Machine**

This provides the security by means of finger prints which is stored already in the data base. Then the finger print which is stored in the data base is checked. Thumb impression is stored in the database. When the voter keeps his thumb in the scanner the system searches for the matches which is already fed. If it matches the system enables one time.

3. **Finger Print based Teachers attendance registration System**

   Here in our system we use this finger printer technology that can record and track the attendance of the teachers in the college. This system has got two ends. The first end consists of embedded integrated system using Renesas 16 bit micro controller with different sensors and Input and Output devices. The system continuously monitors any user's interaction with finger print reader. Once the finger print reads the data it is verified with the database of the teachers available. Once the match is fount it returns a unique code and the LCD display unit will display the details of the teacher like the Name of the teacher and Department details etc at the same time it will generate a beep if the match found. The system will also send the information to a remote unit with the help of serial interface.

4. **Finger Print Based Vehicle Access System**

   FPVI is a security device which will be fitted / installed inside the vehicle, which does not allow the vehicle to start without the verification of Finger Print even without the Right Key used. It immobilizes the vehicle in your absence and prevent it from theft or use by un-authorized person. You can register yourself (fingerprint) as master and can also register fingerprints of others, friends who are authorized to use your car.

5. **Finger Print Recognition Digital Locker Security System**

   The main aim of this project is develop a security lock system based on fingerprint scanning. In this project we are using microcontroller for opening and closing lock based on finger print which is stored in microcontroller itself so that only authorized person will access the security lock.

Biomedical/ Biometric Projects

1. **Alive Human Being Detector Model Camera Independent Robot**

   In this project the Robot will have the PIR sensor, which will help to detect the alive human beings, it consists of an IR based human radiation sensor, which picks up signals from human body radiations and gives a signal output. The

human body radiates infrared waves with wavelengths of 8 to 12 micrometers. Whenever any human being comes in the vicinity of the system (up to 1m) the IR system gives the Signal. The Robot also has a wireless RF Transmitter and sends the message to the Remote Location whenever it finds any alive human.

2. **Bed Side Patient Monitoring System**

The patients in the ICU need a constant monitoring of their ECG, Temperature, BP and heart beat. This project is a working model, which incorporates sensors to measure important parameters namely the Temperature, Respiratory temperature, BP, Heart Beat and ECG. The sensors are interfaced to computer, so that the condition of a patient can be analyzed by doctors in any part of the hospital wherever they are. Whenever there is an abnormality felt by the patient, the particular patient will give an alarm signal, by which the doctor can rush to the patient. Even when the patient is in an unconscious condition, all the parameters will be sensed and doctor will be cautioned

3. **Biomedical wearable device for remote monitoring of physiological signals and location with GSM & GPS**

This system aims to provide help for people with memory loss diseases, namely Alzheimer's. It is capable of providing the geographic position of the person carrying the mobile equipment. The device also monitors the heartbeat and temperature of the patient.Relatives or nurses of the patient can monitor the patient's location by sending ansms to the biomedical device. This will also act as an emergency medical alert system. If the patient's temperature or heartbeat readings become abnormal, the system automatically sends the gps coordinates and physiological parameters.

4. **Eyeball sensor based wheel chair**

This intellichair is designed to help the paralysed person who moves on a wheel chair, instead of the handicapped person moves the wheel chair by his hand, the chair will automatically move to a particular direction as the patient moves his eyes towards a

direction, with the help of Eye ball movement detection sensor. The chair will also sense the obstacles in front of it and gives a beep sound.

5. **GSM Smart Cloth**

   In this project sensors are attached in patient's cloth, the doctor or nurse can access real time measurements of Temperature, blood pressure, heart beat etc, by sending a message. The microcontroller collects information's from sensors and send to mobile phone.

6. **Helping hands for the Disabled**

   The proposed equipment will contain infra-red sensors in-order to track obstacles and alert the user. The alert can be in the form of vibrations or buzzers. In the case of a buzzer, the people in the vicinity will also be alerted and prevent avoidable collisions or accidents.

7. **Monitoring and Tracking System For Patients and Ambulance Monitoring of an Aeroponic Greenhouse with a Sensor Network**

   This project aims to provide high safety for the people lives. This project consist an ambulance tracking system and also it can monitor and send the status of the patient in ambulance via SMS.

8. **Remotely monitoring a patient's mobility A digital health application**

   This system aims to provide help for people with memory loss diseases, namely Alzheimer's. It is capable of providing the geographic position of the person carrying the mobile equipment. The device also monitors the heartbeat and temperature of the patient. This can be used in hospitals where patients are allowed to take strolls. However nurses have to monitor the patient's movements. With this device each patient's location and physiological features can be found instantly.

9. **The Escort System -A Safety monitor for people living with Alzheimer's disease**

This system is equipped with a location sensor called as GPS (Global Positioning system) that keep the track of the patient's location. If in case of emergency the patient can hit the emergency button which will send the current status of the patient's and also the real location. This system even continuously monitors the patient's parameter and if any drift from the normal values then the system will immediately inform the location and the status of the patient's to nearby Hospital, hence the hospital people can follow up with the patient.

10. **Bus Detection Device for the Blind using Passive RFID**

This projects demonstrates the concept of bus detection system by the blind people using RFID. In which the blind people having RFID reader with some microcontroller module which gives the buzzer sound whenever the specific bus comes, the bus is equipped with RFID tag. Whenever bus comes at bus stop the blind person who is provided with RFID reader get signal as it reads tag.

11. **Eyeball Control Automatic Wheel Chair**

This intellichair is designed to help the paralysed person who moves on a wheel chair, instead of the handicapped person moves the wheel chair by his hand, the chair will automatically move to a particular direction as the patient moves his eyes towards a direction, with the help of Eye ball movement detection sensor. The chair will also sense the obstacles in front of it and gives a beep sound.

12. **Fall Detector**

The fall is a very risky factor in the elderly people's daily living, especially the independent living, it often cause serious physiological injury, such as bleeding, fracture, and centre nervous system damages. If the emergency treatments were not in

time, these injuries may result in disability, paralysis, even death. And on the other hand, the fall also produces many psychological problems, here in this system if any one fall with this system a buzzer will buzz.

13. **ECG Holter**

This project aims to develop a small stand alone device that can monitor the ECG of patient and store the data in multimedia card attached to it up to one month continuously. The ECG sensor monitors the ECG variation of the patients the pulse rate of the patient is monitored by the device. If the pulse rate is above or below the normal condition an alert message is send to the doctors mobile

14. **Patients appointment system**

The aim of the project is to provide their exact Patients appointment with using mobile. The purpose of this project is to implement a system where patients can get appointment for concern doctor by avoiding queues and rush.The project constitute a microcontroller, GSM modem, RTC and an EEPROM, the patient need to call the doctor number by calling it will be receive by the GSM modem connected to controller,by using RTC we can able to get the time and date of the call depending upon the call we will assign the token number to that number it will be store in EEPROM. And token number will be send to the patient by a text message.

Robotic Projects

1. **Bomb Detection Robot**

   The aim of this project is to design a **BOMB DETECTION ROBOT** for detecting the explosive material. In this project we concentrate on the detection of weapons (metals) and hence bombs using appropriate sensors and there will be an indication from the microcontroller whenever there is a detection of weapons (metal)/Bomb, hence approximate precautions can be taken when bomb is detected.

2. **Cell phone Operated Land Rover**

   In this project, the robot is controlled by a mobile phone that makes a call to the mobile phone attached to the robot. In the course of a call, if any button is pressed, a tone corresponding to the button pressed is heard at the other end of the call. This tone is called 'dual-tone multiple-frequency' (DTMF) tone. The robot perceives this DTMF tone with the help of the phone stacked in the robot. The received tone is processed by the ATmega16 microcontroller with the help of DTMF decoder MT8870. The decoder decodes the DTMF tone into its equivalent binary digit and this binary number is sent to the microcontroller. The microcontroller is preprogrammed to take a decision for any given input and output sits decision to motor drivers in order to drive the motors for forward or backward motion or a turn.

3. **Coal Mine Rescue Robot**

   We are going to develop a robot to send it into the mine to gather information about the environment inside a mine and to search for victims. The coal mine detect and rescue robot is used for detecting the explosion environment of coal mine and rescuing miners who are trapped in the underground coal mine after gas explosion.

4. **Cell phone controlled smart image capturing robot using DTMF**

Remote vehicle control and operation is a prominent technology used by the military and other security personnel. These are mainly used in surveillance, security and spying operations. In this project the DTMF signal from mobile phone decodes by using DTMF decoder , this decoded signal fed to Microcontroller, microcontroller controls motor according to signal from mobile . Wireless camera module transmits real time video signal to the computer.

5. **Light Follower Robot**

The present robot is designed to follow the torch light or laser light .It has three light sensors named as foresight sensor, left side sensor and right side sensor. Based on the fall of light on any of the sensor the robot will move to the desired direction.. This robo is self-powered, and uses 1.5vX4 battery.

6. **Touch Activated Speaking Robot**

This project is mainly applicable for medical field. Here the transmitter unit is placed near patient. The patient is used to move the robot and also send information to the doctor by using touch screen keypad. In some situation the patient is not able to approach doctor. In such cases patient send the robot near doctor using touch screen keypad using left, right, forward and backward buttons. In keypad for each number one predefined voice message is assigned. If the patient presses any number that predefined voice message reaches the doctor. According to the received message doctor will take further action.

7. **UGV For Military with Zigbee Control From with Wireless Camera Unit**

In this project we deal with robotic ARM with 5 axes along with real time video and audio update from far distance. ARM can be controlled through wirelessly with the help of zigbee unit from the remote computer. In the remote unit the

person can view the real time video and audio and control the 5 axes ARM in any direction. Five axes of robotic movement are at your command with the wireless.

8. **Unmanned Defense Vehicle**

Unmanned defense vehicle which consist of a laser gun with wireless camera unit and also detects the obstacles and take new path for its cruise. Here the defense can remotely control the vehicle along with that they can control the position of the gun and make an attack to enemy from a remote location. This system uses Zigbee communication for controlling the direction and also to control the laser gun.

9. **VOBOT**

This system consists of a remote robotic vehicle whose direction can be controlled with the help of voice. This system can be used in different robotic control application in industry and military application. Here in our system we generally use four commands to control the robotic vehicle movement. The directions are front, back, left, & right.

10. **Design and Development of Weather Monitoring Flying Machine**

This project "Design and development of weather monitoring flying machine" will be used for sensing the weather condition of the particular area by sending the flying robot to that particular location. Here in this project the robot will be attached with sensors that are connected to the microcontroller through Analog to Digital Converter. That sensor information will be sent to the Personal computer through Zigbee based wireless communication.

11. **Remote Desktop Controlled 5 degree motion Robotic Arm**

This system is used to control a Robotic ARM wirelessly from a remote PC. This system helps the people to access objects from far away distance especially in

bomb deployment and diffusion activities. There will be two base units. First unit is placed along with the robotic ARM to decode the information dent wirelessly from the base station. The second unit is placed near the remote computer or base station. The wireless communication is achieved through RF communication and the robotic arm servo motors are accurately controlled.

12. **Blue robot**

Unmanned defense vehicle which consist of a laser gun with wireless camera unit and also detects the obstacles and take new path for its cruise. Here the defense can remotely control the vehicle along with that they can control the position of the gun and make an attack to enemy from a remote location. This system uses Bluetooth communication for controlling the direction and also to control the laser gun.

13. **Unmanned Guided Vehicle Using Zigbee**

Unmanned defense vehicle which consist of a laser gun with wireless camera unit and also detects the obstacles and take new path for its cruise. Here the defense can remotely control the vehicle along with that they can control the position of the gun and make an attack to enemy from a remote location. This system uses Zigbee communication for controlling the direction and also to control the laser gun.

14. **Sorting of Objects Through Pick and Place Robotic ARM**

The Project deals with an automated material handling system. It synchronizes the movement of robotic arm to pick the objects moving on a conveyor belt. It aims in classifying the coloured objects which are coming on the conveyor by picking and placing the objects in its respective pre-programmed place. The project involves colour sensors that senses the object's colour and sends the signal to the microcontroller. The microcontroller sends signal to eight relay

circuit which drives the various motors of the robotic arm to grip the object and place it in the specified location. Based upon the colour detected, the robotic arm moves to the specified location, releases the object and comes back to the original potion

15. **First Aid Android defense**

The basic idea behind this project is to provide first aid to the wounded soldiers in war field. Whenever the person is getting injured it's very difficult to give first aid for the soldiers at the time of war. So to overcome, this project is helpful.

16. **Dual Tone Multiple Frequency (DTMF) controlled Unmanned Guided Vehicle (UGV) using mobile phones**

Unmanned defense vehicle which consist of a laser gun with wireless camera unit and also detects the obstacles and take new path for its cruise. Here the defense can remotely control the vehicle along with that they can control the position of the gun and make an attack to enemy from a remote location. This system uses GSM communication for controlling the direction and also to control the laser gun using DTMF technology.

17. **Mine Defusing Unmanned Guided Vehicle for Battle field**

This project consists of microcontroller, obstacle sensor, ZIGBEE, PC, unmanned guided vehicle. In this project we use metal detector for finding mine areas and also we use ZIGBEE technology for transmitting the information. UGV which consists of wireless camera unit , obstacle sensor for sensing the obstacles and take new path for its cruise. This system uses zigbee communication for controlling the direction and also to control the Camera rotation.

Touch Screen Based project

1. **Touch screen based advanced Home equipment controller**

   This paper mainly focuses on the controlling of home appliances remotely and providing security. This system provides ideal solution to the problems faced by home owners in daily life. The system is wireless therefore more adaptable and cost-effective.

2. **Touch Screen based Voting System**

   This project consists of a Finger print sensor that reads the users finger print and stores it into the memory with the user's details. In this system the other feature is that the voting system, i.e. using the same system the users can vote during the election time. This system will read the finger print first and the user will get a display on the touch screen and hence they can mark their vote using the touch screen. If an unauthorized person tries to vote, suddenly a buzzer is made and also alert system will get enabled. This system can also be interface to a PC to receive the data entered by the users.

3. **Touch Screen Based Attendance System**

   In this project the students name will be displayed on the Graphics LCD screen and the attendance can be marked by touching the present or absent column. The touchscreen will be placed above the graphics LCD. As a selection is made, a tick mark is shown on the screen corresponding to the student name and present/absent column. The list automatically scrolls, screen is updated and new names are displayed. The device will automatically compute present and absentee count.

4. **Image Based Password Authentication for Illiterates with Touch screen**

   This system provides an easy access to the ATM. This system uses latest technologies like Touch Screen and Graphical display unit along with high speed processing unit called Renesas controller. This system helps the illiterate people to access the ATM without using complex number or methods. This system uses full of meaning images that the user need to enter in a particular combination.

5. **3 Dimensional Password For More Secure**

   Here in this system uses the very new technology called as Accelerometer that can provide with the 3 Dimensional movement data. This system consists of a wearable glove unit. When the user need to provide with the password the user need to wear the 3-D unit into his/her hands and provide with the exact 3-D positions to unlock or to give the authentication to the system.

6. **Touch Screen based Nurse Attendant Calling System for Physically Impaired**

   The aim of the project is to design and construction of a module used for patient who are unable to move .it control the buzzer/light indication by a simple touch through touch screen.The project was divided into three phases. The First phase is to demonstrate the application of touch screen. The second phase of the project attempts controlling and display data on Graphic lcd and the third phase of the project is to control the devices(buzzer/lamp).

GPS/ GSM /Zigbee wireless communication Projects

1. **Anti Collision System in Railway Using GSM and GSP- Intelligent Train System with GPS**

   Here each train is loaded with GSM & GPS unit which will inform the station the arrival of the train as well as the current location of the train. This system uses GPS to locate its current position and that information is passed to the base station via GSM. In the advance system it also has the feature of automatic detection and engine kill from the main server system. The main server system in the station monitors the train path and if it seems that two trains are approaching near by the system will automatically kill the engine of both the system.

2. **Automatic Station names Announcement on Trains using GPS & LCD**

   This system uses Global Positioning System module to get the train's current location and updates the user about the next approaching station on the LCD. The station information is unique to each train and is hence preloaded. The device features a (Universal Asynchronous Receiver Transmitter) UART for interfacing the GPS module. The device also displays speed of the train

3. **Advance Remote Accident Report System For Highway Using GSM Network And PC**

   This project shows the practical implementation of automatic GSM based accident-reporting system. This is a highly advanced project that shows an accident occurred in a particular place. This information will be displayed on a report system PC. In this system, each vehicle has a GPS which locates the current location of the vehicle. When the vehicle gets into an accident, the GSM module sends the current location and details of the vehicle to the report system server. This system helps us to provide

immediate measurements to the accident spot. This also helps to avoid traffic jam caused by an accident.

4. **Automatic water tank filling with SMS control and alert System**

   This system comprises of micro controller that monitors the status of the tank and takes necessary action. Now during the successfully filling of the tank the unit send an SMS to the owner intimating "TANK FULL". At the same time the owner can even switch ON & OFF the motor from anywhere in the world.

5. **GPS & GSM based Child tracking system**

   By using this technology Child Tracking System parents can monitor their kids in real time, so that kids can be bold and independent and their parents can always keep an eye through this device whether their kid has trouble or kidnapped etc. Here the student's bag will incorporate a GPS + GSM device. The device will be hidden away in the bag. Once activated, parents can track the location of their child by just sending ansms. The device will respond back with an SMS containing the GPS co-ordinates [Latitude & Longitude] of the child. This information can be cross checked on a map for real-time information about the vehicle. The device can also sense the speed of the vehicle in which the child is traveling.

6. **SMS Based Device Control**

   In this system when we want to control any home appliances from outside, we send the SMS and switch on or off the device. GSM modem receives the information signal, with the help of AT command the SMS is read by the microcontroller. Then the microcontroller recognizes the data and provides appropriate action to the relays to control the specified devices.

7. **SMS Controlled Load Monitoring System**

Here using this mechanism we can control different load at different place. At the same time if they want to know the details of the load they can just send an SMS "Monitor Device name" example "Monitor MOTOR". Hence the different parameter of the motor will be sending and displayed on your mobile phone.

8. **GSM Based automatic bell system**

In this system the Bell Ringing time can be edited at any time by just sending a SMS to the unit, so that it can be used at Normal Class Timings as well as Exam Times. The communication with GSM and other information like Real Time Clock are displayed on the LCD display provided. Here we can set the RTC time, the schedule by sending SMS and also even through the keypad provided. The LCD display is used to provide the interface with the user to provide the setting of the schedule.

9. **GSM Based car antitheft System**

In this Project the system will continuously monitor the lock of the car, and if there a theft they system will immediate inform the owner about the miss handling of the car. And at the same time the owner can send an SMS to the car to give the location of the car. And if necessary the owner can make an immediate stop of the car by sending an SMS. When the system receives the SMS it cuts off the engine and the car is immediately stopped.

10. **GSM Based Electrical Control System for Smart Home Application**

This paper presents the development of GSM-based control home appliances for smart home system. . The main aim of the prototype development is to reduce electricity wastage. The Mobile Phone is integrated with the microcontroller, which receives SMS message from user Mobile Phone and sends a command to Microcontroller to control whether to turn ON or OFF the output. The Mobile Phone also sends status reporting to the user regarding the electrical appliance.

11. **GSM Based Home Water Pump Control**

This project helps us to provide an easy way to control our water pumps from anywhere in the world. This is done by using GSM module to which we have to send the messages and a microcontroller whish is used to automate our task. The farmer has to send a message like "Motor On" to switch on the pump and he will receive confirmation message when motor is switched on. To switch of the pump, the farmer has to send "Motor Off" SMS to the GSM. Then motor will be turned off. If the power is gone and motor is switched on, the system will automatically send a message when power comes that you need to switch on the motor.

12. **GSM Based Irrigation Water Pump Controller For illiterates**

In this project we make use of two microcontrollers one is dedicated at water pump and the other with the user. Both the microcontroller from the heart of the device and there are also two GSM modules which are meant for exchanging commands from one end to other end. The GSM module present at the user end is interfaced with some control buttons via microcontroller .The each button has a dedicated functionality such as getting the power status at the motor, turn ON the motor etc. When ever a control button is pressed it identified by the microcontroller and generate an equivalent command with respect to the button pressed and forward the same to the water pump with the help of module.

13. **GSM based Parents Tracking of The Student Attendance in College**

It is time consuming task for the parents to check regular presence of the student to the college. . And also for the college administrative people it is time consuming task to check each and every student attendance and marks to inform to the parents. But

this project An Intimation to the parents about the bunking of the student for the college through GSM SMS will give and easy, low cost and automatic solution

14. **GSM Based Remote motor starter for Irrigation in Agricultural Application**

Motor Starter for irrigation in Agricultural Applications encompasses lighting, security, telecommunications, access and safety, information and entertainment systems and thermal comfort systems.Commands are sent to Motor Starter for irrigation in Agricultural Applications system through user' mobile as data through SMS (Short Service Messages) providing a cost effective, reliable far reaching access to the user. The coded SMS is sent to the Motor Starter for irrigation in Agricultural Applications base station controller that receives the messages, decodes the messages, initiates required automation operations and responds to the successful initiations by a reply to the user.

15. **GSM Smart Home**

GSM BASED SMART HOME is developed in a motive to help for disabled and aged people. At first, this application is installed in the a Android mobile phone. When the user wants to control a home appliance, he needs to open the application, and select the particular option, when the option is selected, the corresponding device gets operated via GSM.

16. **Centralized monitor with Zigbee update & alert via GSM**

Central-Station is a common term used to refer to a company that provides services to monitor burglar, fire and residential alarm systems. Here on our system we have two different modules (Tx& Rx). The Transmitter (Tx) consist of different sensor like temperature etc and this unit will be continuously sending the data to the centralized unit called as Receiver (Rx). There can be more number of Tx placed in different

location and can be placed anywhere in an industry. Once each Tx are called as NODE or endpoints. Now these nodes will communicate with the central unit with the help of Zig-bee unit using Zig-bee protocol. Each unit will send its data to the central unit.

17. **4 in 1 Safety Control System with GSM**

This project aims to establish few of the security system with real time embedded system that even control different situation. This consists of 4 major units:-LPG sensor, Fire sensor, Anti theft, Automatic switch. All the alerts are updated to the user via SMS. Different sensors are interlinked with the help of RC network that can control the different section such as LPG gas leakage detection and control, Fire with alarm and extinction etc. This unit has the safety feature like theft detection and alarm system.

18. **Common Man Train Tracking System with GSM**

Due to the delay and other factor the common people are worried on the timing of arrival and departure of the train, hence they need to waste lot of time in waiting for train and other issues. Here the user can send a SMS to a particular number which will be decode and an acknowledge SMS is send back to the user. For example if the user sends a SMS like "TRAIN 6265", here this SMS is used to find the location of the train with train number 6265 and hence the system will decode the SMS and will replay back to the same user the current location of the train.

19. **Intelligent security surveillance system for Home automation with auto response for Hazardous Gas, Human Detection and Temperature monitor via GSM**

Every home/office faces the risk of theft, fire and accidents due to combustible gas leak. The device combines all these detection sensors in-order to provide a single point of reference. The system will provide surveillance to the home security, Gas sensors to detect the gas leakage of LPG, iso-butane, propane, LNG combustible

gases and a Motion Sensor to detect the motion in the premises and a Temperature Sensor to monitor the room temperature.

20. **Mobile Printer using GSM**

This system basically consists of a main processing unit, which is connected to GSM unit and thermal printer unit. Now whenever the user want to take a printout of the document, if the concern person wants to take a print out of the note, he/she can send the content of the document via SMS to the main unit. The main unit will receive the SMS and will decode the message part and it will generate a buzzer sound indicating the presence of incoming message and also the decoded document will be printed using a thermal printer interfaced.

21. **Ultimate Home automation with security with GSM Alert and control**

Ultimate home is a fully automatic and self controlled unit with the following features:- Home Automation, Security System, Home Application control. This is an ultimate home automation with all-in-all feature that include the application control via SMS to the security system and alarm and finally the automation that helps the power saving.

22. **Biomedical wearable device for remote monitoring of physiological signals and location with GSM & GPS**

This system aims to provide help for people with memory loss diseases, namely Alzheimer's. It is capable of providing the geographic position of the person carrying the mobile equipment. The device also monitors the heartbeat and temperature of the patient. This can be used in hospitals where patients are allowed to take strolls. However nurses have to monitor the patient's movements.

23. **GSM Smart Cloth**

In this project sensors are attached in patient's cloth, the doctor or nurse can access real time measurements of Temperature, blood pressure, heart beat etc, by sending a message. The microcontroller collect information's from sensors and sends to mobile phone.

24. **Controlling Digital Dimmer Through Mobile Phone**

This project digital control of a dimmer from a mobile phone or PC with Bluetooth unlike current home automation systems, this project extends access from anywhere in the network displayed by these standards and is much lower cost. The program communicates wirelessly with a Bluetooth module that receives the instructions made by the user, these sequences can be prerecorded or a new sequence, instructions are received and processed by the controller.

25. **Zigbee based street light**

In our project, we use Zigbee technique to control the street light. There is a light sensor which measures the availability of light and there is an RTC which indicates the time. According to these parameters, that is availability of light and time, the street lights are switched on automatically one by one. A Zigbee and a light sensor is placed at each street light. Automation is done by using the microcontroller.

26. **Zigbee enabled Speed control of DC Motor**

DC Motor speed control is obtained with pulse width modulation [PWM]. The device can be controlled by desktop applications. The applications or user sends the speed information via zigbee to the remote DC Motor control module. The zigbee receiver on the control module gets the information from the desktop device. The control module adjusts the speed of the DC Motor using pulse width modulation technique.

27. **InfopodsZigbee Based Remote Information Monitoring Devices**

In general monitoring and controlling of the devices at the home for need to done at the device's place only. We need to check for the device whether it is on/off and for switching on/off the device we need to go to the device place. But this project will provide the good solution for monitoring and controlling of the devices from the remote locations.

28. **Investigation Vehicle with Vision and Hurdles Detector Using Zigbee**

Unmanned defense vehicle which consist of a laser gun with wireless camera unit and also detects the obstacles and take new path for its cruise. Here the defense can remotely control the vehicle along with that they can control the position of the gun and make an attack to enemy from a remote location. This system uses Zigbee communication for controlling the direction and also to control the laser gun.

29. **Wireless data transfer from Desktop with Zigbee**

This system consists of a Zigbee module which is plugged into a controlling unit which consists of display unit which displays the amount of data transfer from system to system.

30. **Application and Evaluation of High Power Zigbee Based Wireless Sensor Network**

This project demonstrates the concept of Zigbee Based Wireless Sensor Network in Water Irrigation Control Monitoring System. It reduces the time consuming and need of manual application on an irrigation system to control the pumping the water to the farm filed. Using this Zigbee based wireless technology we can control the pumping of the water according to condition of the soil at the remote location. The sensor senses the moisture level of the soil and sends the sensed data to the controller and the controller sends the data to control room through the Zigbee. Based on the sensed information obtained at the control room the motor turned ON/OFF.

31. **Lab attendances system with Zigbee remote update**

This system will keep a real time track of the students entering the lab and also while the students is entering the lab after the figer print scanning is over it will display the

corresponding students name on the LCD system and after the LAB time the system will automatically update the data to the center machine with the help of the wireless media called Zig- bee. The data is received by another Zig-bee unit which is interfaced to the PC with help of serial interface unit.

32. **Cell Phone Jammer**

The main purpose of a cell phone jammer is to jam a cell phone signal in adesignated area.The jammer described here is for 900MHz range. Once the cell phone jammer isoperating, all mobile phones present within the jamming coverage area are blockedand cellular activity in the immediate surroundings is jammed.

33. **GPS-GSM Based Public Transportation System**

This project proposes and implements a solution for enhancing public transportation management services based on GPS and GSM. The system consists of three modules: BUS Station Module, In-BUS Module, User Module equipped with PC and GSM modem. Bus module consist of Controller section interfaced to IR Sensor pair, GSM module and GPS module. GPS will measure the location of the vehicle with RTC timer part to indicate the exact time of the location. Two pair of IR sensors will be used to display the current status of the passengers in the bus (One pair for incrementing and other pair for decrementing).

34. **Transformer Monitoring System Using GSM**

This system uses GSM Technology to transfer the information or the parameter from the transformer to the substation wirelessly. This advanced system helps to user to warn the substation if there is and failure, an increase of voltage, temperature and also current via SMS. And also the concern person can immediately shutdown the system from the substation by just sending an SMS to the unit placed near the transformer.

35. **Zigbee Based Intelligent Helmet for Coal Miners**

The main objective of this project, a cost effective ZigBee-based wireless mine supervising system. ZigBee wireless technology to build wireless sensor networks, realized real-time surveillance with early-warning intelligence on methane, temperature, humidity in mining area, and used speech communication to reduce potential safety problems in coal production.

36. **Simulation of Earth Quakes and Tsunami through GSM Network**

Simulation of Earthquakes and tsunami through GSM network to develop this project we are using ADC, Accelerometer, GSM,LCD(16x2), reset, buzzer and Micro ControllerR8C25. This system simply monitors the earth vibrations and generates an alert signal when the level of earth vibration crosses a threshold. When earthquake occur the signal is generated and the accelerometer is activated and the signal is send through GSM to Micro controller. The signal has to be generated quickly as possible. This may result in the possibility of generating false alarm.

37. **Real Time Student Verification System Based on SMS Request**

In this present world, parents were too much interested about their children's education, but the thing is when children cross their teenage, they are hard to control. In this system If any parent want to know the progress of their children's they have sent message to the collage phone number by typing their STUDENTS ID (identification number). Whenever modules receive the message it going on to check data base in microcontroller memory for students ID .if any ID matched then it start for checking parents phone number and if their parents phone number matched then microcontroller sends data to that phone number regarding to their children's information.

38. **Density based Traffic Signal Control & Intelligent Ambulance for City Traffic with Zigbee communication**

In this project all the IR receivers placed near the roads are connected to one controller & the traffic signals are connected to another controller. Based on the IR receivers signal information will be send to the signal connected controller using Zigbee. Both the controller will communicate with each other using pair of Zigbee. When the ambulance comes in emergency, IR transmitter will be placed on the ambulance module & IR receiver will be placed near the signal. When the ambulance comes IR receiver gets the signal & send this information to the controller about this ambulance arrival. Then that particular signal will be switched on to green for 40 seconds.

39. **Wireless fingerprint attendance system based on Zigbee Technology**

The main aim of this project is to design an efficient attendance system based onZigbee technology.Aiming at the disadvantages of traditional wire attendance system, a design method ofwireless fingerprint attendance system based on Zigbee technology is proposed. Thesystem includes terminal fingerprint acquisition module and attendance managementmodule in computer. It can realize automatically such functions as informationacquisition of fingerprint, processing, wireless transmission, fingerprint matching, andattendance management.

Android application based projects

1. **Android Platform Based International Direct Digital Election System**

In this project it consists of two unit an application that will run in all android phone and an centralizer highly secured voting device in embedded world. Here each and every people will have ONE opportunity to vote from their mobile using this application. The on the ANDROID phone they will have all the list of the parties that

are enrolled for voting. And the user can select one of the election parties and send their vote.

2. **Unmanned Guided Vehicle Using Bluetooth**

Unmanned defense vehicle which consist of a laser gun with wireless camera unit and also detects the obstacles and take new path for its cruise. Here the defense can remotely control the vehicle along with that they can control the position of the gun and make an attack to enemy from a remote location. This system uses Bluetooth communication for controlling the direction and also to control the laser gun.

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4. **First Aid Android defense**

The basic idea behind this project is to provide first aid to the wounded soldiers in war field. Whenever the person is getting injured it's very difficult to give first aid for the soldiers at the time of war. So to overcome, this project is helpful.

5. **Police friendly intelligent wireless printer with alcohol detector using Bluetooth**

In this project "Police friendly intelligent wireless bill printer with alcohol detector using Bluetooth technology" as its name indicates it is used to print bill remotely using Bluetooth technology. Policeman enter data to the application in the android setup mobile phone, the data transfer and reception is through Bluetooth technology and alcohol detector attached with printer can measure the content of alcohol, it will provide an indication regarding percentage of alcohol. By using this project we can

avoid the problems arising from traffic billing process. This project consists Bluetooth module, microcontroller, alcohol detector, thermal printer, powersupply.

6. **Bluetooth Energy meter with Android Interface**

The main aim of this project is to implement an electronic energy meter with instant billing.In this project we have shown the concept of postpaid energy meter which will automatically sense the energy used in the home and update the reading in EEPROM and LCD display. . For measuring energy consumed by the user we are going to use one Handheld Device with Bluetooth to measure reading, at the same time the reading will be display in LCD. In this project we are using bulbs as a load. The units consumed by the user updates in the EEPROM continuously and reading, bill will print on thermal printer.

RF/RFID Based Projects

1. **Wireless Data Acquisition and Transmission using RF**

A data acquisition module is connected to a control board. The control board verifies the data and transmits it over RF. The receiver section receives the data and presents it in the required format to the user or data storage servers.

2. **Wireless Score Board**

In this project there are two sections transmitter and receiver, transmitter transmits the score details through RF and it will catch by receiver section and display on LED panel. Here in this project there are two teams team A , team B that will display on Receiver section as well as receiver section. We can update the score from transmitting section by using switches. The updated score will display in LCD which placed in Transmitter section and then it transmit by RF transmitter, this transmitted signal will catch by RF receiver which placed at receiver section then it feed to the microcontroller, the microcontroller controls the LEDs either in ON state or in OFF state as required.

3. **RF Based Automatic Speed Limiter For Vehicles**

The objective of this project is to control speed of the vehicle automatically with the help RF technology. This project is very useful to traffic police department. If the speed of the vehicle is over than limit value, the speed is automatically controlled. Many RF transmitters is placed in the emergency road and traffic rush areas. These RF transmitters are transmitting the speed limit value through the RF transmitter. The transmitter section consists of key pad encoder and RF transmitter. The key pad is used to set the speed limit value. The receiver section consists of microcontroller RF receiver, Decoder, Proximity sensor and driver circuit for relay. The receiver section is attached in the vehicle.

4. **Tracking Police Man Using RF Proximity Card**

Here in this project RTC is providing the clock with date and time, and this date and time is displaying in LCD. When the police man swipe the card, RF reader will read the card and decode the card value. Decoded card value is send to microcontroller. Microcontroller is receiving the card value and the card value is stored in external EEPROM memory with the swiped date and time. Details of the card swiping are retrieved by connecting the machine to a PC. After connecting to PC through serial port, valid password is required to retrieve the data. Upon successful entry of the password data will transfer from machine to PC.

5. **RFID Based Animal Identification System for Dairy Farms**

RFID animal identification picks up where animal tracking leaves off. Extending the scope of RFID technology to identify and track individual animals enables ranchers to track growth rates, feeding patterns and health statistics for each animal in a herd of livestock. This information can be used to help determine the time livestock should be sent to market or bred.Animal identification presents some unique challenges to technology suppliers. Most asset tracking applications keep products under strict human control on assembly lines and in warehouses and trucks. Livestock and wild

animals tagged for environmental studies are alive and often free to move through a variety of environments.

6. **RFID based Bus Tracking**

This proposed project is to identify the bus station and route for public transport system. This system helps the passengers to know the location and route of travel. The tracking of the bus is done by reading the data from the RFID tag present in the bus and the status of the bus is updated on PC.

7. **Aeronautical Crash Prevention System through RF Communication**

The main aim of this project is to prevent the collision among air flights. Here RF technology is used to prevent the collision between the flights.

8. **Home Security and Automation with 3G & RFID**

This system uses the latest technologies like 3G video call; IR Tag reader for authentication and also with GSM enabled security system. In this system If owner access the place with a valid ID card then there won't be any action done. The system will normally work of Open/Close, but if an unauthorized tries to access the area with and invalid card or tries to break up the area. Immediately the owner will receive a call in video format (3G Video call). Hence this system can immediately transfer the real time video of the thief's. This system also have an advanced feature done with the help of GSM unit, ie the system can activate an alarm as well as a trigger to AC (Air conditioner) along with chloroform so that the thief's can be arrested.

9. **Boarding school monitoring system using RFID**

This project is to develop an embedded system, which will record the time of the student using RFID card based system and the data should be stored in the personal computer. The RFID tags enable school management to track the students movements in and out of the hostel or school.

10. **Library Automation Using RFID**

In this project we are using the RFID technology for identifying the books and persons based on unique Tag number and LPC2148 Microcontroller which is ARM7 architecture will process the data and sends it personal computer side data base in which the data base will be maintained about the Person who is taking the book and which book he is taking and that data base will be updated when the book is returned.

11. **PC Home Appliance Control System With RF and Auto Timer System**

The new generation of life is fully automated and secure system. This project can be used for the controlling of various appliances using PC. This system consist of a main control unit which is connected to the PC and the main unit consist of wireless unit namely RF system which will send appropriate signals to different system and they can be independently controlled from a single point of control.

12. **Office Personnel or Object Location Sensing with RFID**

Tracking objects or people in real-time is generally accomplished with Global Positioning Systems. A proposed method is to install RFID Readers at predefined locations across the building floors and room entrances and corridors. All objects to be tracked will be RFID tagged. Whenever the objects move across office rooms or corridors, the RFID readers record the objects id and time of interaction. The object information is transmitted to desktop PC for maintaining the database with a desktop application.

13. **An RFID Warehouse Robot**

The main aim of this project is to build an autonomous robot which identifies and picks the household items and store the item in appropriate location. The purpose of this project is to use robot which has the ability to identify the items by reading the tag on the items. The robot should pick up the item and navigate to prescribed destination using line follower module to store the item at the appropriate place and location.

14. RFID Based Automatic Speed Limiter for Vehicles

The objective of this project is to control speed of the vehicle automatically with the help RFID technology. This project is very useful to traffic police department. If the speed of the vehicle is over than limit value, the speed is automatically controlled. So this project is used to prevent the accident. This project is designed with RFID, Microcontroller, Speed limiter circuit, LCD, Proximity sensor, DC motor.

Bluetooth/IR based projects

7. **Bluetooth Based Smart Home**

The project mainly aims in designing completely automated switch board with the help of Android mobile phone.BLUETOOTH BASED SMART HOME is developed in a motive to help for disabled and aged people.At first, we have to install controlling application in to the Android mobile phone. When the user wants to control a home appliance, he needs to open the application, and select the particular option. When the option is selected, the corresponding device gets operated via Bluetooth.

8. **Wireless Dc Motor Speed and Direction Control Using IR Communication**

A pulse width modulator (PWM) is a device that may be used as an efficient DC motor speed controller. There are Three switches used to control the direction of the stepper motor at the transmitter side. The status of these switches is transmitted using IR transmitter and received by the IR receiver. The microcontroller at the receiver will be continuously monitoring the status of these switches received from the decoder and performs the corresponding action.

9. **Automatic Bike Controller Using Infrared Rays**

In this project, microcontroller 89s52 forms the processing part, which firstly receives data from receiver using remote controller. It likes a transmitter. Then microcontroller 89s52 performs the comparison of lock or unlock the logic of program for which microcontroller has already been programmed. The result obtained from the above operation is given through output port of 89s52 to LCD display of relevant data and generated pulses as per the logic program which is further fed to the driver circuit to obtain the desired output of controlling Bike.

10. **MCU Controlled Bluetooth Automation with Infrared Sensor**

In this project the remote device accept commands from the BTSerial1, or the controller board, via Bluetooth communications. This will turn ON/OFF the loads that is connected to the relays. The process of the whole circuit is like a simple switch, but uses infrared, that, If the signal from the infrared transmitter is blocked, the buzzer will turn on, this will serve as a simple alarm that can have many useful applications.

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and make an attack to enemy from a remote location. This system uses Bluetooth communication for controlling the direction and also to control the laser gun.

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In this project "Police friendly intelligent wireless bill printer with alcohol detector using Bluetooth technology" as its name indicates it is used to print bill remotely using Bluetooth technology. Policeman enter data to the application in the android setup mobile phone, the data transfer and reception is through Bluetooth technology and alcohol detector attached with printer can measure the content of alcohol, it will provide an indication regarding percentage of alcohol. By using this project we can avoid the problems arising from traffic billing process. This project consists Bluetooth module, microcontroller, alcohol detector, thermal printer, powersupply.

13. **Bluetooth Energy meter with Android Interface**

The main aim of this project is to implement an electronic energy meter with instant billing.In this project we have shown the concept of postpaid energy meter which will automatically sense the energy used in the home and update the reading in EEPROM and LCD display. . For measuring energy consumed by the user we are going to use one Handheld Device with Bluetooth to measure reading, at the same time the reading will be display in LCD. In this project we are using bulbs as a load. The units consumed by the user updates in the EEPROM continuously and reading, bill will print on thermal printer.

Automobile / Security projects

1. **Accident Investigation System**

Cars are subject to traffic accidents at any time. However many vital information about the car at the time of accident is unknown to the investigation officers. This system helps to investigate how, when and where the accident happened. The unit

consists of several impact sensors, temp sensor and GPS system.The unit will record the data from the vehicle temperature sensor, the current time and GEO location from the GPS to a database on the system. In case of any accident the reading from the impact sensors are read and recorded in the database.

2. **Automatic Railway Gate An Train Security System**

In this project by employing the automatic railway gate control at the level crossing the arrival of train is detected by the sensor placed on either side of the gate at about 2km from the level crossing. Once the arrival is sensed , the sensed signal is send to the microcontroller and. subsequently, buzzer indication and light signals on either side are provided to the road users indicating the closure of gates. After a delay the motor is activated and the gates are closed. The signal about the departure is send by an another sensor to the microcontroller, which in turn operates the motor and opens the gate. Thus, the time for which the gate is closed is less compared to the manually operated gates since the gate is closed depending upon the telephone call from the previous station. Also reliability is high as it is not subjected to manual errors. If the DC motor does not work properly , then the locopilot is informed by making the indicator as red. When two trains are coming in same track, collision can be avoided by using RF transreceiver in which they send the same signal to each other. Accidents **due** tolandslides are avoided by using indicators which are controlled by the pressure sensor, activated when pressure made on it.

3. **Automatic car parking system**

Our project helps to automatically park the cars in the area where space is available. This is done by using IR sensors. In our system, the gate will be opened automatically, when reaches near the gate. This is also done by using IR sensor. This sensor can also measure distance. Thus a better control can be created by our project. This project is cost effective and easily implementable.

4. **Automatic Bike Controller Using Infrared Rays**

   In this project, microcontroller 89s52 forms the processing part, which firstly receives data from receiver using remote controller. It likes a transmitter. Then microcontroller 89s52 performs the comparison of lock or unlock the logic of program for which microcontroller has already been programmed. The result obtained from the above operation is given through output port of 89s52 to LCD display of relevant data and generated pulses as per the logic program which is further fed to the driver circuit to obtain the desired output of controlling Bike.

5. **Black box for Automobiles car**

   Cars are subject to traffic accidents at any time. However many vital information about the car at the time of accident is unknown to the investigation officers. This system helps to investigate how, when and where the accident happened. The unit consists of several impact sensors, temp sensor and GPS system.The unit will record the data from the vehicle temperature sensor, the current time and GEO location from the GPS to a database on the system. In case of any accident the reading from the impact sensors are read and recorded in the database.

6. **Automatic Toll Tax**

   Heart of the project is an ir transmitter and receiver modules. In this project we have to make coin box exactly same as used in pco coin box machine fixed on railway station or elsewhere. We have to make two coin size holes one for one rupee, and other for five rupee coin. You have to fix up coin sensors on these holes, one sensor should be fixed for five rupee coin and one sensor for one rupee coin. Here one rupee coin for small vehicles and five rupee coin for heavy vehicles. Here vehicle detecting by sensing the ir beam.

7. **Automatic Street Light Intensity Control and Road Safety**

This system has automatic street light intensity control based on the vehicular movement and switching ON and OFF of street lights depending on the light ambiance. This paper also aims at reducing road accidents by detecting consumption of alcohol by the driver. This can be implemented using alcohol sensor module which contains skin sensor, breath alcohol sensor and proximity sensor. This can be done using PIR sensor which senses the movement and passes the information to the microcontroller. The pattern in which the lights have to be turned ON can also be programmed, as in dimming of lights etc. Additionally LDR (Light dependent resistors)can be used. The ambiance of light is checked and lights are turned ON when it is dark and are turned OFF during the day time. The advantage of using the PIR is that it can sense the human movement and also that of the vehicle.

8. **Electronic Eye With Security System**

This project is developed to design a security system that gives the information about secured area to the specific location using IR and RF communication. The major action in this system is controlled by transmitter section; this section consists of IR transmitter and IR receiver and RF transmitter. Here we need to generate IR frequency continuously IR receiver continuously receives the signals from the transmitter. Whenever the light path in between IR transmitter and IR receiver cuts by an Obstacle, receiver signal gives low to high pulse. By connecting the receiver output to the micro controller interrupt pin, it gives interrupt to the micro controller. Immediately the system gives the buzzer and sends the message to the remote location by using RF transmitter. RF receiver is tends to display the message on LCD display by connecting it to the micro controller.

9. **Highway Monitoring and Control**

This Project actually performs a task of monitoring and controlling the parameters of a Vehicle while travelling in Highways. Here Speed Sensor will measure the speed of the vehicle and display the same in the LCD, Obstacle

Sensor will sense any obstacle in front of vehicle and it will slow down or stop the vehicle as per the requirements, Location finding – Here the current location of the vehicle will be displayed, Start and Stop switches will be provided to start and stop the vehicle, Receiver – RF featured powerful receiver will be placed in the Vehicle to receive the online / current information's / status ,Various Parameters will be displayed in the LCD like Over Bridge, School Zone, Hospital Zone, Accident prone zone, etc.

10. **Traffic information system for vehicles word**

In the traffic information system there are two sections Transmitter section and receiver section,the transmitter section is placed in Traffic police vehicle or the location in which they want to send information or warning to Driver. Receiver section is placed in vehicles. In the transmitter The message selector select the message which we want to send or police can edit real time message this selected message feeds to microcontroller, microcontroller display this message in LCD same time transmit the message through RF transmitter. At the receiver section which is in vehicle receives the message through RF receiver module and feeds received data to microcontroller. The microcontroller identifies the data then provides a message alert through buzzer and display the message in LCD.

11. **Intelligent Security System**

Programmable number lock system is a high security number lock system that can be used as intelligent security system. The present system is very user friendly. Here there are two cases first if the two passwords match and second if two passwords doesn't match(entered password and stored password at RAM) , if they match, our system gets unlocked and seven segment displays 'P' with a buzzer sound. In case the password entered by user is wrong then our system remains closed and seven segment displays 'F' with a buzzer sound at low volume. You can at most make 5 attempts to unlock the system.

12. **Gas detector with auto window open and SMS alert**

Every home/office faces the risk of theft, fire and accidents due to combustible gas leak. The device combines all these detection sensors in-order to provide a single point of reference. The system will provide surveillance to the home security, Gas sensors to detect the gas leakage of LPG, iso-butane, propane, LNG combustible.Once the device is activated it will monitor the above mentioned parameter and will inform the preprogrammed users (this can be house owner, police station, fire station, neighbor's mobile etc) via SMS. The significant feature here is that the device can automatically open the window and let the gas leak out. This enables people to enter safely and rectify the gas leak.

13. **Digital Code Lock**

Security is a prime concern in our day-today life. Everyone wants to be as much secure as possible. An access control for doors forms a vital link in a security chain. The microcontroller based Door locker is an access control system that allows only authorized persons to access a restricted area. Here in this system when they entered password equals with the password stored in the memory then the relay gets on and so that the door is opened. If we entered a wrong password for more than three times then the Alarm is switched on.

14. **Automated Railway Gate Level Crossing Scrutinize and Control**

Aim of this project is control the unmanned rail gate automatically using embedded platform. These project sensors are fixed at some distance on both side of the gate. When train cross the fore side sensor it gives signal to the gate receiver to close the gate. In the receiver side the buzzer is activated to clear the gate area for drivers about 5 seconds. When train crosses down side sensors it gives signal to open the gate.

15. **Automatic Vehicle Over Speed Controlling System For School And College Zone**

The main aim of our project is to control the over speed of vehicle for school and college zone using the robot. Here we use the RF technology for that controlling. By this project we can control the vehicle speed through the radio frequency. The receiver will receive the signal in the predetermined area only. When the receiver receives the signal, automatically it will display as school zone and control the speed limit of vehicle.

16. **Authentication with 3D Password & Gesture Recognition**

Hear this system uses the very new technology called as Accelerometer that can provide with the 3 Dimensional movement data. This system consists of a wearable glove unit. When the user need to provide with the password the user need to wear the 3-D unit into his/her hands and then provide with the exact 3-D positions to unlock or to give the authentication to the system. One of the higher level of authentication is also added with the help of touch screen with gesture recognition of patterns. With the help of the touch screen on the GLCD provided they can enter the pattern by combining different dots on the screen and once the pattern done the complete authentication is provided to the user.

17. **Jewelry Security**

This project aims to provide security for the jewelry shop with high end devices like IR system, Magnetic sensors & Motion sensor. This system will generate immediate alarm and also has an advanced system that sends alert SMS to nearby police station and to the owners mobile. In this system we can feed two different number ie, owners number and nearby police station number. This system can be used in higher level with advanced camera and laser unit to provide much greater security.

18. **Wireless Access Monitoring and Control System Based on Digital Door Lock**

This system has a Keypad or switches by which the password can be entered through it. When the entered password equals with the password stored in the memory then

the GSM modem sends a message to the user. Then the user sends an SMS to the embedded system then the relay will be on the door will be opened. Entering password should be displayed on the liquid crystal display and the GSM. If the sending password through the GSM is also correct, then the lock will be opened otherwise the lock will not be opened.

19. **Security For Industrial Alert System Using Pressure and Temperature Sensor**

The main aim of the project is to monitoring the "TEMPERATURE AND PRESSURE FOR INDUSTRIAL SECURITY".According to the situation our controller monitors the temperature and pressure, if the situation attains critical stage automatically the sensors level will be increasing, an interrupt voltage is given to controller to intimate the situation for alerting using Buzzer section.

20. **Automatic Maintenance Reminder for diesel Engines**

In our project we have four of these input points. Input from the various sensors will come to these points these are oil sensor, fuel sensor, air sensor and viscosity sensor. whenever any sensor get actuated, it energizes a relay which makes the contacts which are connected to external alarm circuit With this project, for demo purpose, we can just short these input terminal points with the piece of wire in order to actuate the alarm circuit.

21. **Home Security System With IVRS**

This is project is proposed for home security purpose. There will be a system installed in front of the home, if any visitor has come to the home the system will automatically make a call to the authorized person's mobile number which is preprogrammed in the system. When the authorized person attends the call, there will be an announcement through the speaker installed in the system such that "Identify yourself". After the visitor identifies himself/herself, the authorized person can decide whether to open the door or not. In this system If the authorized person wants to open the door, he can

enter the secret code to open the door through the keypad of his mobile phone if the entered secret code is correct then the door will lock will be automatically released.

22. **Smoke detector with alert**

This project includes a smoke sensor for smoke detection, and when the sensor senses the smoke the system will activate a camera to capture the video of the particular area and there will be an alert SMS will be sent to the Authorities or predefined users. So that they can take necessary action against it. This system can be placed in common area like cities, towns, near shops etc.

23. **Automatic Street Light Control using RTC**

This project gives the best solution for electrical energy wastage. Also the manual operation of the lighting system is completely eliminated. This project is very useful for commercial sign boards, advertising boards, street lights for automation lighting system. This system switches on the lights only at preprogrammed timings. 3X4 keypad is provided for entering the required timings. This keypad made this project user friendly. 4-digit seven segment display is provided to display the alarm times and current time. DS1307 is interfaced to the microcontroller for real timing performance.

24. **3 Dimensional Password For More Secure**

Current authentication systems suffer from many weaknesses. Here in this system uses the very new technology called as Accelerometer that can provide with the 3 Dimensional movement data. This system consists of a wearable glove unit. When the user need to provide with the password the user need to wear the 3-D unit into his/her hands and provide with the exact 3-D positions to unlock or to give the authentication to the system.

25. **Remote Accident Report System for Highways using RF**

The aim of this project is to monitor the accidents which occur on the highways using RF technology**.** Accidents which occur on the highways can be monitored using this project. And the information of occurrence of the accident will be transmitted to the control section wirelessly using RF communication. In the vehicle section, an accident switch is placed, whenever the accident occurs, the information is transmitted to the control section. The vehicle section is having a RF transmitter in it, by which information is passed wirelessly.In the monitoring section RF receiver module is placed which receives the data from the RF Transmitter. A buzzer is placed in this section and it will be on whenever accident occurs and also displayed in the LCD.

26. Train tracking and Information System

This system uses the latest technologies like GPS, GSM and RF for locating and for communication. This system uses a high performance controller for computing the location and for communication. Here each train is loaded with GSM, GPS and RF transmitter unit which will inform the station, the arrival of the train as well as the current location of the train. At the station there will be a GSM module with keypad and a RF receiver. When passenger press the key a predefined SMS will send to the particular train. When the train gets this SMS train will reply back to the station with current location of the train, this location will display on LCD which placed at the station. When any train arrives at the station the RF transmitter which placed at the train will send the train information. The RF receiver which placed at the Station will collect this information and Display it on LCD with announcement.

27. RFID Based Automatic Speed Limiter for Vehicles

The objective of this project is to control speed of the vehicle automatically with the help RFID technology. This project is very useful to traffic police department. If the speed of the vehicle is over than limit value, the speed is automatically controlled. So this project is used to prevent the accident. This project is designed with RFID, Microcontroller, Speed limiter circuit, LCD, Proximity sensor, DC motor.

Electrical projects

14. **Automatic Mains Failure Solution**

It provides reliable and accurate start/stop operation of the D.G.SET with AUTO LOAD CHANGE OVER FROM D.G.AND MAINS and FAULT ANNOUNCIATION for the safety of the D.G. SET. It senses the main supply failure and give starting pulse to diesel generator. If the generator dose not get started with the first attempt , it will make two more attempts to start the D.G. set. When it fails to start with three attempts, it will sound an alarm with indication " START FAIL" Even if the engine starts normally but alternator dose not produce the required voltage, in that case "ALTERNATOR FAIL" signal will come. when the main supply get re-stored, it will change over to mains and switch off the D.G. set automatically.

15. **Electronic Circuit Breaker**

An**circuit breaker** is an automatically-operated electrical switch designed to protect an electrical circuit from damage caused by overload or short circuit. Its basic function is to detect a fault condition and, by interrupting continuity, to immediately discontinue electrical flow.

16. **Industrial Fault Indication System With Over Voltage, Over Temperature Using ADC**

This project is a digital meter that can measure voltage, current, and resistance. Analog and digital converters are connected to analog circuit and the output generated from ADC is connected to micro controller for acquiring desired parameters. The set point is predefined in the program whenever the set point exceeds or the reading below the set point of temperature dc motor comes into the on condition. Temperature set points are predefined in the system. When the temperature exceeds or decreases from the set point system will automatically ON DC motor or OFF DC motor. At the same time indication is displayed using green and red led lights which show voltage

level and the voltage readings are displayed on the LCD screen. Similarly green and red leds indicates the voltage. These readings can then display on the LCD display.

17. **Microcontroller Based Power Monitoring for 600kva Battery Back Up**

The microcontroller-based power monitoring system is an electronic device used to continuously monitor the parameters of power such as voltage, current, frequency, etc at the various points of an electric or electronics devices.This system is an 8-channel device, which accepts 8 analog input signals and consist of analog multiplexer, A/D converter, ROM, RAM, buffer etc. The different channels are selected by simple switch operation. From the UPS the channels and alarms are given to the microcontroller and it will process and control the parameters.

18. **Zigbee enabled speed control of DC motor**

DC Motor speed control is obtained with pulse width modulation [PWM]. The device can be controlled by desktop applications. The applications or user sends the speed information via zigbee to the remote DC Motor control module. The zigbee receiver on the control module gets the information from the desktop device. The control module adjusts the speed of the DC Motor using pulse width modulation technique.

19. **Pc Based Speed Control of DC Motor**

A pulse width modulator (PWM) is a device that may be used as an efficient DC motor speed controller. Here in this project Two push-to-on switches are provided for increasing / decreasing the speed of the motor. Two more push-to-on switches are provided to rotate the motor in Clock wise / Counter clock wise direction. 16X2 LCD is connected to display the speed level of the motor and the direction. LED indication is also provided for visual indication. A buzzer is provided for audio indication of DC motor speed variation and change in direction. Whenever the speed is increased /

decreased, the system acknowledges by a short beep. This buzzer is driven by transistor driver circuit.

20. **Radio Controlled Dc Motor**

This project controls a small 6V d.c. motor, but can be used for 12V or higher voltage d.c. motors as well. The circuit controls both the speed and the direction of the motor wirelessly using RF transceiver. There is a Keypad for selecting the speed at transmitter section this selected speed will transmit through RF , RF receiver will catch this signal and give to microcontroller after decoding process then microcontroller change the speed of motor using PWM technic corresponding to the sent signal.

21. **Automatic dimmer breaking and lighting**

The system will be having a light sensor when light falls from the opposite vehicle to light sensor the headlamp will be automatically go to dim mode and the system also got accident prevention system such as automatic breaking when an unexpected pedestrians cross the vehicle. This part of the project is done with help of IR sensors.

22. **Green Home Energy Management System Through Comparison of Energy usage Between the same kinds of Home Appliances**

The project is totally based on Green Home Energy Management System (GHEMS) technology through comparison of energyusage between the same kinds of home appliances. The HEMS inthe home server gathersthe energy information from the electrical outlets anddisplays hourly, daily, weekly, and monthly energy usage of home appliances with this a user can figure out detailed energy information.The electrical outlets also identify whether the connectedhome appliance is turned on or turned off and whether it ison the standby state or the normal state by measuring theconsuming power. And comparison of energy usage is done by using reference or typical energy values of home appliances.

23. **Microcontroller Based speed controller of DC motor**

Pulse-width modulation (PWM) or duty-cycle variation method is used here for control the speed of DC motors. In this project DC motor's speed measure by a reed sensor and display it on LCD. We can assign different speed for different keys in keypad, when press a particular key the microcontroller will get a signal with assigned speed value and microcontroller compare this speed with current speed. If the speed is not matching with the current speed value then the microcontroller change the speed of the motor to the assigned value using speed controlling circuit. The updated speed will show on LCD.

24. Design and Implementation of a Bi-directional Power Converter for Electric Bike with Charging Feature

In this project we run a motor through motor driver which is actuated by the controller. That motor is coupled by another motor. Due to coupling the other motor rotates and generates back emf. This generated back emf is boosted and applied to battery to charge the battery.LCD is used to display the battery and back EMF voltages.

25. Bluetooth Energy meter with Android Interface

The main aim of this project is to implement an electronic energy meter with instant billing.In this project we have shown the concept of postpaid energy meter which will automatically sense the energy used in the home and update the reading in EEPROM and LCD display. . For measuring energy consumed by the user we are going to use one Handheld Device with Bluetooth to measure reading, at the same time the reading will be display in LCD. In this project we are using bulbs as a load. The units consumed by the user updates in the EEPROM continuously and reading, bill will print on thermal printer.

26. Smart Power Monitoring, Controlling and Alert for Electric Home Appliances Based on Power Line Communication Via Internet

By using Power Line Communication (PLC) technology, electric home appliances can be controlled and monitored through domestic power lines.In this system it consists of basically two units, a monitoring unit, controlling unit.The monitoring

system will reads the power consumer by each device and will update the user via internet, the controlling unit is used to control each appliances by the user via internet.

Display projects

1. **3D POV Display**

   3- D POV Display new technology in advertisement field which creates 3-D illusions of images and running characters. This Display uses the principle of "Persistence Of Vision"(POV). An array of LED's, battery and microcontroller unit is mounted on a DC Motor and rotated at high speed. The program written on the microcontroller is designed to detect rotation speed and blink LED's precisely once every rotation. In-order to display alphabets we need to incorporate a "character design map" within our program.

2. **Propeller Display**

   This project is a special kind of circular LED display. With the help some mechanical assembly, LED count, hardware requirement. this project use the principle of Space Multiplexing. This propeller display is mechanically scanned and displays the characters in digital format. Made from scrap it can be used anywhere and everywhere and the most amazing fact about this display is it's crystal clear display. This display consists of just 8 bright LEDs which are rotated to show the display.

3. **Digital clock with Alarm**

   This project is a digital clock using LCD with Alarm facility. In this project there is a real time clock (RTC), DS1307 which uses I2C protocol for communication is employed. It is connected with CR2032 battery and so after loading DS1307 with current time, its internal seconds, minutes and hours registers are automatically updated. Clock is displayed on Liquid crystal display. There are 3 switches for setting alarm and time.

4. **Microcontroller Based Digital Clock With Calendar**

   This project is a digital clock using LCD with date. In this project there is a real time clock (RTC), DS1307 which uses I2C protocol for communication is employed. It is connected with CR2032 battery and so after loading DS1307 with current time and date it will update automatically. Clock is displayed on Seven segment display.

5. **Token Number display with Voice**

   Main features of the project are it, not only display the called number but also speaks out the number. In case of any security threat to the cashier, a panic foot switch can be connected on a suitable place or many such switches can be installed , press the switch to dial the nearest police station number to inform about the emergency situation in the bank.

Accelerometer projects

1. **Design of Dual-axis Inclinometer Based On MEMS Accelerometer**

   This system consists of a Graphical LCD Display with the latest technology for 3 axis indicators called accelerometer. With the help of the accelerometer the data from the meter is fed to microcontroller unit. This unit calculates the tilt and the displacement

according draws the image on the Graphical LCD. This system also uses an analog to digital converter to convert the voltage signal from the accelerometer.

2. **Digital Spirit level using Accelerometer on a GLCD**

This system consists of a Graphical LCD Display with the latest technology for 3 axis indicators called accelerometer. With the help of the accelerometer the data from the meter is fed to microcontroller unit. This unit calculates the tilt and the displacement according draws the image on the Graphical LCD. This system also uses an analog to digital converter to convert the voltage signal from the accelerometer.

3. **Wireless Earth quick Alarm Design Based on MEMS Accelerometer**

Large magnitude earthquakes may cause significant losses of life and property. A method is described in the present disclosure which includes detecting a longitudinal wave of a seismic movement by an accelerometer. Determining whether a magnitude of the longitudinal wave exceeds a predetermined threshold, and wirelessly transmitting an alarm notification indicating seismic movement to at least one alarm device.

4. **Wearable Mouse**

In this project the mouse movement is controlled by means of moving the hand in different direction. The device has got one wearable gloves and a transmission unit, the movements of the hand is detected and the information will be send through serial to the PC from the transmitter unit. The glows also got three switches embedded into to it. One is for on/off and another two is for left click and right click.

5. **Fall Detector**

Fall detector is a device which is mainly implemented for elder peoples this device will fix on body, if he falls an alarm will activate. Here an accelerometer is used to sense the fall or inclination of body.

6. **Accelerometer Based Gesture Recognition For Wheel Chair Direction Control**

The aim of this project is to implement wheel chair direction control with hand gesture reorganization.An accelerometers can be used to effectively translate finger and hand gestures into computer interpreted signals. For gesture recognition the accelerometer data is calibrated and filtered. The accelerometers can measure the magnitude and direction of gravity in addition to movement induced acceleration. In orderto calibrate the accelerometers, we rotate the device's sensitive axis with respect to gravity and use the resultant signal as an absolute measurement.

Microcontroller Projects

27. **Agricultural Solar Water Pump**

This unit also consists of solar tracking which can provide maximum power. The system operates on power generated using solar PV (photovoltaic) system. The photovoltaic array converts the solar energy into electricity, which is used for running the motor pump set. The system requires a shadow-free area for installation of the Solar Panel. The panel will be mounted on top of a tracking motor which will be controlled by a processing unit. This will be monitor the solar light and will track the solar panel and will provide maximum power output.

28. **Agriculture Monitoring Based on Wireless Sensor Network**

The objectives of this project are Increasing production, Automated Monitoring conditions, Communicating the person residing away from the field. Application of precision agriculture is fulfilled with a field-wide sensor network able to monitor relevant parameters, for example, soil moisture and air temperature, and to transmit data wirelessly to the farmer location, so that appropriate measures can be adopted. Wireless sensor networks can help monitoring fields, vineyards and orchards, thus helping farmers to prevent damages to their crops and increasing crop production.

29. **Automatic water Level Monitoring**

Here in this project we show that how we use conductive sensor to control the working of pump. Working of the pump is controlled by the water level of the source tank, if the main tank is empty then pump gets automatically on and when it is fully filled then pump's get automatically off. But even when there is no water in the source tank, pump will remain switched off. So working of the pump totally depends upon both, the source as well as main tank.

30. **Automated Water Tank**

Purpose of this project is to control our domestic water pump set with the help of a digital logic circuit. It automatically fill our water tank and we doesn't bother about to turn *ON* and *OFF* the pump set.

31. **Automatic Room Light Controller with Visitor Counter**

This Project "Automatic Room Light Controller with Visitor Counter using Microcontroller" is a reliable circuit that takes over the task of controlling the room lights as well us counting number of persons/ visitors in the room very accurately. When somebody enters into the room then the counter is incremented by one and the light in the room will be switched ON and when any one leaves the room then the counter is decremented by one. The light will be only switched OFF until all the persons in the room go out. The total number of persons inside the room is also displayed on the seven segment displays.

32. **Automated Aquarium**

The Automated Aquarium Controller is a system that monitors and controls a large fish aquarium. The user input will allow the operator to change many settings, such as: current time, lighting times, feeding amount, pH range, water temperature, and water change reminders (warnings.).

33. **Blind Stick With Camera Interface**

An implemental and will be affordable design for blind stick is presented in this project. An extreme care is given and this stick will act as an eye for the blinds and kith and kin of them. A totally wireless solution with audio & video interface is compacted in this project with 3-level detection using IR sensors is implemented for real time and safety usage. We are going to interface with three sensors for head, Right & Left in this project.

34. **DS1820 Temperature Controller**

The aim of this project is to design an ambient temperature measurement circuit. An 89s52 Microcontroller will be used for handling all the required computations and

control. A temperature sensor DS 1820 is used for sensing the ambient temperature.The system will get the temperature from the IC and it will display the temperature over the seven segment display and this temperature was compared with the value stored by the user and if the Room temperature goes beyond the Preset temperature then fan will on and if temperature goes below to a fixed value then heater will on.

35. **DTMF Based Human less Boat Control For Oceanic Research Applications**

This project is a prototype boat that can travel in water. The direction of the robot can be controlled by DTMF using mobile phone. This can be moved forward, backward direction. Also this robot can take sharp turnings towards left and right directions using DC Motors. when we dial the numbers in the mobile phone from the controlling side then it automatically recognizes which number has been recorded and it follows with the corresponding next step to be taken i.e., movement of the robot in water.

36. **EEPROM Based Smart Prepaid Energy Meter With Auto cut Off On No-Balance**

In this system the user has to purchase an EEPROM based recharge card and it should be inserted in the slot provided on prepaid energy meter kit. After inserting the recharge card into the system, the user should press RECHARGE key to start recharge. Then the system will be loaded with specific units as per the recharge card value. A 16X2 LCD is provided to read units available. Whenever the count value reaches one thousand, 1unit is decremented from EEPROM and these values are displayed on LCD. When 1 unit is decremented from EEPROM the system will give a

beep sound. When the recharged units become zero on power consumption, the system shutdown all the loads connected to it by giving a continuous beep sound.

37. **Embedded System Based Implementation of Drip Irrigation**

In this project the signal from different sensors such as water , temperature etcsend to microcontroller unit which placed at monitoring section. A 16X2 line LCD module can be used in the system to monitor current readings of all the sensors and the current status of respective valves.

38. **Energy Saving Through Counter**

This project is a standalone automatic room light controller with auto door opening and closing. The main aim of the project is to control the lighting in a room depending upon lighting that is present in the room.The system comprises of two IR Transmitter-Receiver pairs, one of which is located in front of the door outside the room. The other pair is located inside the room.LDR is placed outside the room and is used to identify whether it is day or night time. Initially the light is switched off in the room. Whenever a person tries to enter into the room, the receiver of first IR pair identifies the person. Then the microcontroller opens the door. After the person had entered into the room completely, the door will be closed automatically. The light is switched off even if anyone is present inside the room during the daytime. Similarly, the light is switched off if no one is there inside the room or if it is nighttimes. Thus, depending on the intensity of light and the surrounding temperature, the required action is performed by the microcontroller. LCD displays the number of persons present inside the room.

39. **Fully Automatic Consumer Billing System**

Here in this project the meter reading is done by the person or using advanced wireless reading method(EB). Then calculate the bill amount from the meter reading. The billing administrator have the following details about the consumer name ,

account number, address etc. The admin can enter consumer's account number in GLCD then the system will display consumer name and account number, after confirm the account number and name, admin enters consumer bill amount on GLCD using touch screen then press OK the transaction will happen automatically. This time a message will send through GSM with an information about the bill amount, previous balance, current balance .Then a detailed receipt of bill amount deduction will send to consumer's home.

40. **Geo Fencing**

This is a system which automatically controls the speed of vehicle with the help of the Global Positioning System (GPS). GPS will sense the location with the help of Satellite available for position sensing and it will be processed in our micro controller if the location is a speed restricted area then the speed of the vehicle will control automatically. The fencing area and the speed can be set by the user, and once the vehicle reaches near by the location the motor speed will reduce to set speed. This can be globally used near places like Schools, Hospitals, Traffic area, Colleges etc. This can avoid lots of accidents that happen due to vehicles.

41. **Home Lighting Automation with Ambient with touch**

This system is a kind of automatic intelligence system which controls the lighting of each and every room of the house depending up of the condition like temperature, lighting, time etc. For example if the system is programmed in such a way that every day after 9am in the morning everyone in the house goes out, then the system will automatically switch off all the lighting and fans and other electronic application hence providing energy saving. This system can be programmed with the help of display and the keypad unit available.

42. **In-House Green Bee**

This system continuously monitors different parameter from the sensors and automatically controls the different parameter. This system consists of "Humidity Sensor", "Temperature Sensor", "Moisture Sensor", "Light or LUX sensor" that will maintain the environmental condition. If there is any sudden drift in the parameter of the things cannot be controlled by "Green Bee" it immediately alters with a buzzer alarm with SMS Alert.

43. **Intelligent and Ultimate Vehicle Control with Sleep Detector and All kind of Alert**

In this project it consists of automatic light dimmer, automatic breaking system, sleep detector and also with alert system that will indicate the presence of accident via SMS to nearby hospital and police station with the location using GSM & GPS. The system will be having a light sensor when light falls from the opposite vehicle to light sensor the headlamp will be automatically go to dim mode and the system also got accident prevention system such as automatic breaking when an unexpected pedestrians cross the vehicle. This also includes impact sensor and vibration sensor that sense the accident and immediately make a call or SMS to nearby police station and hospital. This is also in cooperated with a sleep detector which will detect weather the driver is sleeping or not and generate appropriate alarm and indication.

44. **International Direct Digital Election System**

In our unit it consist of two unit an application that will run in all android phone and an centralizer highly secured voting device in embedded world. Here each and every people will have ONE opportunity to vote from their mobile using this application. The on the ANDROID phone they will have all the list of the parties that are enrolled for voting. And the user can select one of the election parties and send their vote. This system is highly secured in all the senesce, like if the user tries to send more than one request the voting system will reject the vote and also if the user tries to send from

his/her own anther number, again the voting system will reject the vote. Hence this system will provide an opportunity to all people in the country to make a valid vote.

45. **Microcontroller based Bidirectional Visitor Counter**

Here is a low-cost microcontroller based visitor counter that can be used to know the number of persons at a place. Two IR transmitter-receiver pairs are used at the passage: one pair comprising IR transmitter IR TX1 and

46. **Microcontroller Based Object Counter**

This project is used to count Objects. A pair of 38khz IR transmitter and a IR receive is used to count the objects. Counts pulses are out from the 38khz receiver which is then fed to microcontroller. Microcontroller will count the number.

47. **Mobile Phone Security System With IVRS , Mobile Number Verification and DTMF Number Decoding**

Once of the latest technology is used in this system to provide security. This system allows the user to login or to access the material or to enter in a secured area by his mobile number and the four digit password he enter after making a call. When the user reaches the secure are the user need to make a call from the concern user mobile to the security system. The system decodes the user number and if a valid user number the system will ask for the second level of security password. The user needs to enter the four digit user password to clear the security. This system uses GSM to decode the user number and also the DTMF is used to decode the number entered by the user.

48. **Monitoring of an Aeroponic Greenhouse with a Sensor Network**

The objective of this project is to design a simple, easy to install, microcontroller-based circuit to monitor and record the values of temperature, sunlight of the natural

environment that are continuously modified and controlled in order to optimize them to achieve maximum plant growth and yield. The controller communicates with the various sensor modules in real-time in order to control the light, aeration and drainage process efficiently inside a greenhouse by actuating a cooler, fogger, dripper and lights respectively according to the necessary condition of the crops. Here the data can be read through the wireless ZIGBEE.

49. **NFC-Based Written Literary Management**

In this project we use the NFC to manage books in an library and late and reminder for returning of books via SMS alert using GSM. In this system micro controller interfaced to NFC reader and GSM Unit. Out unit keeps a complete track of the available book in the library. When a user need to access a book he need to show the book to the NFC reader and each book contain NFC card. Now these card contain the complete information of the book. When the user shows the book the user system will ask for the user code all the library user is provided with an user code. Once the user code is entered the system registers that book is with user and also the system take care many things.

50. **Palm scope**

Palm scope is a type of electronic test instrument that allows observation of constantly varying signal voltages, usually as a two-dimensional graph. Although an oscilloscope displays voltage on its vertical axis, any other quantity that can be converted to a voltage can be displayed as well. The micro controller will read the data and the data is represented on GLCD. Here we use 128x64 LCD and the data is shown in a graphical form. There is an select switch used to select the channel. The data is also stored in the SSD card available. The data at the same time will be sending to the computer with the help of serial interface. The input voltage will be scaled to 0 – 5v scale and will be represented on the GLCD.

51. **Poultry Farm Lighting Automation and Energy Saver Unit**

In a poultry farm environment, proper lighting and temperature conditions have to be maintained. Lights should be activated and deactivated and preset times and in a predetermined sequence. The light sensing is done with the help of a lux sensor. Internal and External Temperature have to be monitored. If temperature goes higher than the preset values, fans have to be turned on to reduce the temperature. An alarm should also be triggered.

52. **Real Time Precrash Vehicle Detection System**

Here in this project we are using IR sensor system for detecting pre-crash between vehicles. In our proposed system we are using Infrared transmitter and infrared receiver combination system which is attached to microcontroller board. A buzzer is also attached to a microcontroller based embedded board. The IR sensor system continuously sends signals and monitors any car or other obstacles are in front of car. The distance up to which IR sensor can work may be up to 1 meter. When any obstacle or vehicle detected by IR sensor, it will send signal to the microcontroller. Microcontroller after receiving this signal sends a signal to the Buzzer system which will work immediately. Vehicle drive can control his vehicle as per this buzzer signal when the vehicle is at 1 meter distance away from the front vehicle.

53. **Renesas Based Crypto System With Key Generation**

Cryptography is the practice and study of techniques for secure communication in the presence of third parties (called adversaries). Here there is a data acquisition module is connected to a control board. The control board verifies the data and transmits it over RF. The receiver section receives the data and presents it in the required format to the user or data storage servers.

54. **Robonuat with Vision, Hurdles Detector & Robotic Arm**

Robonaut consist of a laser gun with wireless camera unit and also detects the obstacles and take new path for its cruise. Here the defense can remotely control the vehicle along with that they can control the position of the gun and make an attack to enemy from a remote location. This system uses Zigbee communication for controlling the direction and also to control the laser gun.

55. **Sonar Device For Blind Peoples**

This paper presents an obstacle detection system for visually impaired people. User can be alerted of closed obstacles in range while traveling in their environment. The system we propose detects the nearest obstacle via a stereoscopic sonar system and sends back vibro-tactile feedback to inform he user about its localization. The system aims at increasing the mobility of visually impaired people by offering new sensing abilities.

56. **Split phase Induction Motor Control using advanced SPWM Techniques**

In our project this half HP single phase induction motors are made to rotate in both directions at particular angle according to the requirement. With the help of microcontroller and some extra circuits we are rotating the motor 180 degree both clockwise and anti-clockwise directions with high efficiency. . The other advantage is that the starting capacitor can be removed from the circuit, which is the major aging part reduces the life of the motor.

57. **Students & School bus monitoring System**

This project focus into the safety and tracking of all the children and even the school bus using the new Hi Tech technologies like, figure print scanner, GSM/GPRS and Global Positioning System (GPS). This unit is attached inside the bus near the foot step of the school bus. Now when the student's leaves from home, they need to enter into the bus after scanning their finger in the finger print sensor provided, then system will send an SMS to their parents mobile informing that their kid has got into the bus. This system has advanced features like it can also indicate or give the information on real time position of the school bus. Now when the school is over and as the children get into the school bus all the parents' will receive and SMS that their kids have got

into to the bus. Here The parents can also send an SMS to our system asking for the current location of the school bus via SMS. Now our unit receives the SMS and sends back the real time location of the school bus.

58. **The E-Certificate for students and citizens**

The RFID is a new technology and take major role in the embedded system. In this project the RFID card and reader are used. The card consists of information about the passenger, which will not change. Each passenger has unique information. The RFID card reader reads the information from the card and compares with the information stored in the passenger database.

59. **Two channel Temperature Logging for Furnaces**

The purpose of this project is to measure physical quantities from different furnaces in industry and to send this information to the PC connected at the control room.In this project we are going to sense the information from the different sensors placed at the remote locations at the industry and that sensed information is send the PC present at the control room. This has to be monitored by Engineers. Here the sensors we are using are the foutemperature sensors connected to the furnaces in the industry that sensed information is send to the control room through the wireless communication technology .i.e., Zigbee. And that sensed information is displayed on the PC's Hyper terminal.

60. **Ultimate Vehicle Control and Alert Ultrasonic Distance Meter**

Here in this project consists of light dimmer, automatic breaking system and also with alert system that will indicate the presence of accident via SMS to nearby hospital and police station with the location. The system will be having a light sensor when light falls from the opposite vehicle to light sensor the headlamp will be automatically go to dim mode and the system also got accident prevention system such as automatic breaking when an unexpected pedestrians cross the vehicle. This part of the project is done with help of IR sensors. This also includes impact sensor and vibration sensor

that sense the accident and immediately make a call or SMS to nearby police station and hospital using GSM.

61. **Ultrasonic Distance Meter**

The ultrasonic range finder is designed to measure the distance between two objects. It takes less time to measure distance of the objects, measured distance displays in LCD. This system uses ultrasonic sound pulses to calculate distance between objects. From source point user will send ultrasonic pulses to other end using transmitter and then receiver will catch reflected pulses and time is calculated for transmitting and receiving of pluses based on this time distance is calculated and displayed on LCD.

62. **Wearable Mouse**

In this project the mouse movement is controlled by means of moving the hand in different direction. The device has got one wearable gloves and a transmission unit, the movements of the hand is detected and the information will be send through serial to the PC from the transmitter unit. The glows also got three switches embedded into to it. One is for on/off and another two is for left click and right click.

63. **Windmill Speedometer with Frequency Counter**

This project is mainly designed to calculate the speed of the motor; this is done by using microcontroller and photo sensor. The photo sensor is located near the motor. Whenever the motor completes one rotation the photo sensor senses this and generates the pulse. This pulse is given to the Microcontroller. Microcontroller works like a counter. So whenever microcontroller gets a pulse from the photo sensor it Increments the counter value. The counted value is displayed in the LCD which is in digital form.

64. **Wireless Pollution Monitoring System**

In this paper we investigate the use of Wireless Sensor Networks (WSN) for air pollution monitoring. Here we use Different kind of sensors to find out the pollution

in air. In this use a zigbee network that will communicate with a Center unit which will analyze the situation if the pollution level exceeds the main unit will automatically send an alert SMS to the concerned person regarding the drift in the pollution level.

65. **Wireless Real-time Imitating 5 degree Motion Robotic ARM**

In this system the robotic ARM will move according to the movement of human ARM. This project consists of two parts. A gesture recognition section and 5 motor robotic ARM. The two systems are interfaced using zigbee interface. The first part is fixed to the human ARM and the unit will read the different position of the ARM and will be processed and the information is send to the Robotic ARM unit with the help of zigbee protocol. The information receives from the zigbee and process then passes to the different DC motor to act the same way as the human ARM. Hence this is a new system that can be used in different application where the human cannot access or handle large weight etc,.

66. **A Real Time Paddy Crop Field Monitoring System based on Zigbee Network**

The purpose of this project is to implement a highly enabled paddy crop field monitoring system using ZIGBEE Wireless Sensor Network without human interactions.. This paper proposed idea about monitoring the crop field area without human interaction.Wireless sensor network (WSN) consists of a large number of low cost sensor nodes which are deployed in the sensing area. They can sense, sample and process the information gathered from the sensing area, and transmit it to the observer.

67. **Police friendly intelligent wireless printerwith alcohol detector using blue tooth**

In this project “Police friendly intelligent wireless bill printer with alcohol detector using Bluetooth technology” as its name indicates it is used to print bill remotely using Bluetooth technology. Policeman enter data to the application in the android setup mobile phone, the data transfer and reception is through Bluetooth technology

and alcohol detector attached with printer can measure the content of alcohol, it will provide an indication regarding percentage of alcohol. By using this project we can avoid the problems arising from traffic billing process. This project consists Bluetooth module, microcontroller, alcohol detector, thermal printer, powersupply.

68. Dual Tone Multiple Frequency (DTMF) controlled Unmanned Guided Vehicle (UGV) using mobile phones

Unmanned defense vehicle which consist of a laser gun with wireless camera unit and also detects the obstacles and take new path for its cruise. Here the defense can remotely control the vehicle along with that they can control the position of the gun and make an attack to enemy from a remote location. This system uses GSM communication for controlling the direction and also to control the laser gun using DTMF technology.

69. Mine Defusing Unmanned Guided Vehicle for Battle field

This project consists of microcontroller, obstacle sensor, ZIGBEE, PC, unmanned guided vehicle. In this project we use metal detector for finding mine areas and also we use ZIGBEE technology for transmitting the information. UGV which consists of wireless camera unit , obstacle sensor for sensing the obstacles and take new path for its cruise. This system uses zigbee communication for controlling the direction and also to control the Camera rotation.