CITL Tech Varsity

CITL Tech-Varsity VIJAYANAGAR

#56, II Floor, Pushpagiri Complex, 17th Cross 8th Main, Opp Water Tank,Vijaynagar,Bangalore-560040.

Website: www.citlprojects.com, Email ID: projects@citlindia.com,hr@citlindia.com

MOB: 9886173099 / 9986709224, PH : 080 -23208045 / 23207367

EMBEDDED PROJECTS

(Networking, Network-Security, Mobile Computing, Cloud Computing, Wireless Sensor Network, Datamining, Webmining, Artificial Intelligence, Vanet, Ad-Hoc Network)

AUTOMOTIVE

NO	PRJ TITLE	ABSTRACT	DOMAIN	YOP
1	Car to Car Communication based on GPS and WI-FI	This Project proposes a vehicle-to-vehicle communication protocol for cooperative collision warning. Emerging wireless technologies for vehicle-to-vehicle (V2V) and vehicle to-roadside (V2R) communications such as DSRC (Dedicated Short Range Communications) are promising to dramatically reduce the number of fatal roadway accidents by providing early warnings. One major technical challenge addressed in this Project is to achieve low-latency in delivering emergency warnings in various road situations. Based on a careful analysis of application requirements, we design an effective protocol, comprising congestion control policies, service differentiation mechanisms and methods for emergency warning dissemination. Simulation results demonstrate that the proposed protocol achieves low latency in delivering emergency warnings and efficient bandwidth usage in stressful road scenarios	Automotive	
2	Approach lightning system/pilot controlled lightning at airport runway for energy conservation/aircraft radio control of aerodrome lightning (arcal)	Pilot Controlled Lighting (PCL), also known as Aircraft Radio Control of Aerodrome Lighting (ARCAL) or Pilot Activated Lighting (PAL), is a system which allows aircraft pilots to control the lighting of an airport or airfield's approach lights, runway edge lights, and taxiways via radio. At some airfields, the aerodrome beacon may also be ARCAL controlled. ARCAL is most common Anton or little-used airfields where it is neither economical to light the runways all night, nor to provide staff to turn the runway lighting on and off. It enables pilots to control the lighting only when required, saving electricity and reducing light pollution. The ARCAL frequency for most aerodromes is usually the same as the UNICOM/CTAF frequency, although in some rare cases, a second ARCAL frequency may be designated to control the lighting for a second runway separately (an example of this is runway 01/19 at the airport in Sydney, NS). To activate the lights, the pilot clicks the radio transmit switch on the ARCAL frequency a certain number of times within a specified number of seconds. There are two type of ARCAL systems, type J and type K. When either type of system is activated, a 15-minute countdown starts, after which the lights turn off. While the lights are on, whenever a lighting command is issued, whether it changes the lighting intensity or not, the 15-minute countdown is reset. At some airfields, the lights may flash once to warn pilots that the lights are about to go off, before turning off two minutes later.When using ARCAL, it is strongly recommended that aircraft on final approach to the airfield issue a fresh lighting command, even if the lights are already on (especially if the lights were activated by another aircraft). This is so that the lighting does not turn off at a critical moment (such as when crossing the runway threshold).	Automotive	
3	Design and Realization of the Accelerometer based Transportation System	An accident is a deviation from expected behavior of event that adversely affects the property, living body or persons and the environment. Security in vehicle to vehicle communication or travelling is primary concern for everyone. The work presented in this article documents the designing of an accident detection system. The accident detection system design informs the police control room or any other emergency calling system about the accident. An accelerometer sensor has been used to detect abrupt change in g-forces in the vehicle due to accident. When the range of g- forces comes under the accident severity, then the microcontroller activates the GSM modem to send pre-stored SMS to a predefined phone number. Also a buzzer is switched on. The product design was tested in various conditions. The test result confirms the stability and reliability of the system	Automotive	

4	Implementation OF Real Time Passenger Information System Using GPRS (RTPIS)	RTPIS provides travel information to passengers and tourists enabling them to make informed decisions about modes, routes and departure times. The RTPIS framework can be broadly divided into two contexts: (1)Pre-trip context and (2) On-trip context. Pre-trip context:-The former provides information like timings, fares and routes well before the commencement of travel, through the Internet or the Short Messaging Service (SMS). The On-trip context: - provides information like location and places of interest (POI) while on the move. This is achieved using on-board and at-stop terminals (displays and audio announcement units).	Automotive	
5	Advanced Rural Transportation Systems (ARTS)	Advanced Rural Transportation Systems (ARTS) provide information about remote road and other transportation systems. Examples include automated road and weather conditions reporting and directional information. This type of information is valuable to motorists travelling to remote or rural areas. This has been widely implemented in the United States and will be a valuable asset to countries like India, where rural areas are widely distributed	Automotive	
6	Advanced Traffic Management System/ Automatic Number Plate Reader (ANPR) cameras/ Automatic Vehicle Identification (AVI)/ Automatic Vehicle Classification (AVC)	ATMS involved a trial run of the fully automated Traffic Regulatory Management System (TRMS), Involving usage of surveillance cameras in the city of Chennai. This project involved installing sophisticated cameras, wireless towers and poles, under the Rs. 3-crore-State government funded project. Automatic Number Plate Reader (ANPR) cameras were installed in 28 out of 42 vantage points in the city, while „Pan Tilt Zoom" (PTZ) cameras were deployed in 10 out of 12 busy junctions identified. The traffic police also plan to install 40 CCTV cameras at various junctions. This is to warn motorists who blatantly violate rules and monitor traffic on arterial roads during peak hours. This integrates various sub-systems (such as CCTV, vehicle detection, communications, variable message systems, etc.) into a coherent single interface that provides real time data on traffic status and predicts traffic conditions for more efficient planning and operations. Dynamic traffic control systems, freeway operations management systems, incident response systems etc. respond in real time to changing conditions	Automotive	
7	Design and control of segway	The purpose of the project was to design and build a 1/5th scale Segway cart. The cart was modeled after a two wheeled transportation device that uses sophisticated electronics to balance. The cart was designed to follow a line as fast as possible while still keeping a load balanced atop. The cart was limited to several maximums; a height of 6 inches, a mass of 1-kg, wheel diameters between 0.5 and 6 inches, and removable handlebars from 7-9 inches. The cart also had to support a cylindrical mass with specifications of, a mass up to 2-kg, and a diameter of up to 6 inch. The cart was designed to rock on its wheels over a range of 60 degrees forwards and backwards as well as to follow a black electrical tapeline on a light colored floor. The cart was expected to be self-contained including the power source. With the above design constraints, the cart was then designed to be lightweight, structurally strong enough, inexpensive, and to follow the specified path. The cart was constructed of hollow aluminum tubing, which made up the frame. The tubing was soldered together. The cart used a spinning hanging mass attached to a potentiometer to sense the angle of tilt. By measuring the change in voltage in the potentiometer as the cart tilted, the balancing of the cart was regulated. Photo sensors were implemented for detecting the black electrical tape and to start the cart in motion	Automotive	
8	Advanced Vehicle Control Systems (AVCS)	AVCS are tools and concepts that enhance the driver's control of the vehicle to make travel safer and more efficient. For example, in vehicle collision warning systems alert the driver to a possible imminent collision. In more advanced AVCS applications, the vehicle could automatically break or steer away from a collision, based on input from sensors on the vehicle. Both systems are autonomous to the vehicle and can provide substantial benefits by improving safety and reducing accident induced congestion. The installation of high tech gadgets and processors in vehicles allow incorporation of software applications and artificial intelligence systems that control internal operations, ubiquitous computing, and other programs designed to be integrated into a greater transportation system.	Automotive	

9	Advanced Public Transportation System APTS/ Intelligent Transport System/ Vehicle Positioning System (VPS)	One application implemented in APTS area is GPS vehicle tracking system in public transport buses (Bangalore, Chennai, Indore) to monitor vehicle routing and frequency .so that passengers do not have to wait long hours for a bus. .The objective is to provide Global Positioning System based passenger information system to help passengers utilize their waiting time at bus stops more efficiently as well as to reduce the uncertainty and associated frustrations. Display boards with high quality light emitting diode in wide-view angle are provided at bus stops so that passengers can read the information. It displays the number and destination of the approaching bus, expected time of arrival, and messages of public interest. Even SMS Alert is provided to the Ticket reserved passengers from Main server Applies state-of-art transportation management and information technologies to public transit systems to enhance efficiency of operation and improve safety. It includes real-time passenger information systems, automatic vehicle location systems, bus arrival notification systems, and systems providing priority of passage to buses at signalized intersections (transit signal priority).	Automotive	
10	Multipoint Wireless Data Acquisition System for Smart Vehicle /Black box system/Online DATA Acquisition system for Smart vehicle/Vehicle data loggers	In data acquisition mode ARM-7 microcontroller acquires and stores different parameter of car. The main block of Wireless Data Acquisition System for Vehicles is ARM-7 micro controller which is heart of the WDASV which provides monitoring and controlling actions. It senses signals from input blocks and processes output blocks. The software program is stored in ARM-7 microcontroller on chip memory, according to which it provides the controlling actions. The on chip ADC converts these parameters into digital form and gives to the ARM-7 microcontroller. The status of door status i.e. whether the door is opened or closed is sensed by door status block and gives the corresponding signal to microcontroller. The speed of the vehicle is sensed by the speed sensor and this speed is measured in RPM by ARM-7 microcontroller. With the help of keyboard block the driver can enter the password along with cabin temperature. The LCD block is provided for visual display of the message and password. Also it continuously displays the measured parameters. The RTC provides real time clock depending on which the various events occur. Whenever accident takes place the accident interrupt block gives interrupt to the ARM-7 microcontroller. Through serial communication block the WDASV is interfaced the PC. With this interfacing the stored data is transferred serially to PC, for the analysis purpose..	Automotive	
11	Electronic Toll Collection (ETC)	The Electronic Toll Collection (ETC) is designed to determine if a car is registered in a toll payment program, alert enforcers of toll payment violations, and debit the participating account. With ETC, these transactions can be performed while vehicles travel at near highway cruising speed. ETC is fast becoming a globally accepted method of toll collection, a trend greatly aided by the growth of interoperable ETC technologies. Technologies used in ETC are Automatic Vehicle Identification (AVI), Automatic Vehicle Classification (AVC), Video Enforcement Systems (VES) and Vehicle Positioning System (VPS).ETC systems are deployed in the following cities in India: Delhi, Mumbai, Kolkata, and Chennai..	Automotive	
12	Automatic Terminal Information Service or ATIS	The ATIS information is relayed by a recorded voice and is important in an airport's/Bus Terminal /Harbor everyday operation, like when there are multiple landing strips receiving traffic because of upcoming landings and even operational information. Here is several ATIS information that is important to the pilot/driver. Drivers use this information whenever they can to ensure the safety of the flight; they even listen again and again especially when there are changes in air traffic. The objective is to inform road-users of latest traffic updates and better management of traffic. Technologies that are employed are:- SMS, internet and radio have been employed for updates	Automotive	
13	Design and implementation of low cost automatic meter reading using GPRS technology	This paper presents the design and implementation of a secure low cost Automatic Meter Reading (AMR) system that calculates and transmits the total electrical energy consumption to main server using General Packet Radio Service (GPRS) technology provided by GSM networks. The proposed AMR system consists of three main parts: Accurate digital meter, a transmission facility and the billing server. To make affordable AMR system a low cost off-the-shelf materials are used	Automotive	

14	Smart road and vehicle system	This study aims to improve smarter road facilities by the introduction of new smart RFID systems that would reduce accidents and time. Most of the recent technologies relies on image processing technique to detect specified zones by reading the sign boards by using cameras. But in rainy and dusty conditions this may not recognize patterns, it may not guide to specific zone. Therefore, the author proposed implementation of Smart Road And Vehicle System using RFID technology. And today, with RFID and other technologies, they generate more data than ever before. Smart Track can use that data to help make railroads more efficient, safer, faster, cleaner, and profitable. In a word: smarter. The RFID cards are placed at the roads and the same reader is fixed at the bottom of the car . When car passes the card the reader reads the card and takes necessary action that card specifies. The program for the particular card is written and it is installed in the car and it just has to execute that program. And this will reduce the accidents in school, hospital and in sharp turns etc. This is also an efficient and safer technique for this generation	Automotive	
15	Intelligent Car Lighting System using LDR	Automatic car lighting system is a simple yet powerful concept, which uses a transistor as a switch.By using this system manual works are 100% removed. It automatically switches on the lights when the sunlight goes below the visible region of our eyes. This is done by a sensor called Light Dependent Resistor (LDR) which senses the light actually like our eyes. It automatically switches off the lights, whenever the sunlight comes visible to our eyes.	Automotive	
16	A control design for vehicle speed with multilevel using wireless Communication Technology	The main objective is to design a smart display and controller meant for vehicle's monitors the zones and maintains the specified speed of the zone levels, which can run on an embedded system. Smart display & control (sdc) can be custom designed to fit into a vehicle's dashboard, and displays information on the vehicle to traveled the different zone and its automatically controls vehicle's speed in different zonal state (like school zone, hills area, u-turn, highway etc.) The transmitter modules operate with a carrier frequency of 418mhz within the 260mhz – 470mhz rf spectrum (unlicensed spectrum) thus avoiding any fcc charges or regulations. The wireless transmitter module can send data up to 100 feet away from the vehicle	Automotive	
17	Automatic Toll Gate Management and Vehicle Access Intelligent Control System Based on ARM7 Microcontroller	There are millions of drivers passing through Toll Gate Stations every day. The conventional or the traditional way of collecting the toll from the vehicle owners or the drivers is to stop the car by the Toll Gate Stations and then pay the amount to the toll collector standing (or perhaps sitting!) by the side of the toll booth, after which the gate is opened either mechanically or electronically for the driver to get through the toll station. An efficient utilization of communication link between RF Modems over a wireless channel to facilitate vehicle monitoring, vehicle authentication and automated toll collection on the highways is proposed. The system is implemented to automatically a more convenient way of collecting the toll and traffic management. It's called Electronic Toll Gate Stations using RFID and ZigBee Technologies. The implementation is divided into the design of three modules, Vehicle Module (Active Tag) and the Central Database Module, Tollgate station. The three modules communicate via GSM modem connected to each module..The special feature of RFID tags it provides Security through PASSWORD	Automotive	
18	Automatised Toll Gate System Using Passive RFID and GSM Technology	Automatized toll gate system using passive Radio Frequency Identification emerges as a converging technology where time and efficiency are the matter of priority in toll collection systems of present day. In order to overcome the major issue of collision, in our project the reader is placed in a strip which is laid beneath the lane, and the tag is placed in the front side of the number plate. The object detection sensor which is placed on the side of the road detects the approach of the oncoming vehicle and intimates the stepper motor toraise the strip. Thus the reader raises to ground level and reads the information in the tag andthe transaction takes place through a centralized database and the aftermath details of thetransaction is intimated to the user's mobile through GSM technology.	Automotive	
19	Microprocessor Based Controlling & Monitoring of Gas Run Automobiles	The presence of dangerous LPG leakage in the cars, service station or in the storage tank environment can be detected using the Ideal Gas Sensor. This unit can be easily integrated into a unit that can sound an alarm or give a visual suggestion of the LPG concentration. The sensor has both admirable sensitivity and rapid response time. This sensor can also be used to sense other gases like iso-butane, propane, LNG and even cigarette smoke. The output of the sensor goes high as soon as the LPG sensor senses any gas leakage from the storage. This is detected by the microcontroller and the LED & buzzer is turned ON. After the delay of few milliseconds, the exhaust fan is also turned ON for throwing the gas out and it continues sending message as 'GAS LEAKAGE' to a mobile number which is pre-defined..	Automotive	

20	Token number display with voice and secuirty using microcontroller	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 omany such switches can be installed, press the switch to dial the nearest police station number to inform about the emergency situation in the bank.	Automotive	
21	GSM controlled door latch opener with security autodial-up	The said project is designed on the DTMF decoding. our modern telephone and even our mobile phone uses DTMF coding for number dialing. These DTMF codes can be decoded and utilised for useful purposes. The circuit utilises ic8870 for dtmf decoding. Microcontroller 89c51 reads these codes and takes the necessary action. Door latch can be opened by entering the correct password, you can also connect security sensors of your choice ,in case of any breach of security takes place , the device will dial out the prestored number and delivers an emergency message.	Automotive	
22	Research and design of restaurant service in wireless call system	The design of wireless calling system services is using 89C51RD2 microcontroller as core in restaurant. The system is based on RF remote controlling module, which sends the customer information to the client under table, the client to process the information, and then sends information to the service by RF2401 radio frequency module. After receiving the information service will show the needs of customer by termination module. So it is providing the best "Efficient, Quick" Service for customer. The system has been proved to be of high accuracy, easy in operating and high reliability on site	Automotive	
23	Pic16f877a based industrial time operated machine with lcd display / time operated electrical appliance controlling system	The most important problems faced are the misusage of electricity and its wastage. Sometimes due to carelessness of the persons lamps or fans are left ON which results in wastage of electricity. Also in some industries lots of manpower is utilised just to operate the devices at some perticular interval of time. Our project helps to overcome all these problems. Power Saving Using Time Operated Electrical Appliance Controlling System is a reliable circuit that takes over the task of switch on/off the electrical devices with respect to time. This project replaces the Manual Switching. It has an Inbuilt Clock which tracks over the Time. When this time equals to the programmed time, then the corresponding device is switched ON. The switching time can be edited at any Time using the keypad. The Clock is displayed on LCD display. Microcontroller is used to supervise the actions of all other devices and to control the entire set of operations.	Automotive	

CAN

NO	PRJ TITLE	ABSTRACT	DOMAIN	YOP
1	A Virtual Control System for Automotive and Railway Industries	The purpose of this project is to implement an A Virtual Control System for Automotive and Railway Industries that automatically detects a red signal and stops the train. This system when implemented would help avoid accidents by taking automatic action even when the driver is inattentive. This is done with the help of an RF transmitter placed on the traffic signal and an RF receiver in the train. When the train receives the signal, it slows down the train incrementally eventually bringing it to a stop. In this project, a dc motor is used in place of a train and IR sensor and LED is used instead of RF transmitter and receiver to save costs. The dc motor is connected to an LPC2129 microcontroller via four relays. At full speed, all the relays are switched on. When the signal turns red, the IR sensor causes an interrupt to occur that causes the microcontroller to switch off a relay. The dc motor slows as a result. The microcontroller then switches off the three other relays one after the other causing the dc motor to stop completely	CAN	

2	Bus data acquisition and remote monitoring system based On CAN bus and GPRS	Bus data acquisition and remote monitoring system combines the installation of an electronic device in a Bus, with purpose-designed computer software to enable the owner or a third party to track the Bus location, collecting data in the process. Modern vehicle tracking systems commonly use Global Positioning System (GPS) technology for locating the Vehicle, but other types of automatic vehicle location technology can also be used. Vehicle information can be viewed on electronic maps via the Internet or specialized software. In the main they are easy to steal, and the average motorist has very little knowledge of what it is all about. To avoid this kind of steal we are going to implement a system it provides more security to the Bus. If a burglar can break open the lock, then it becomes easy for the burglar to steal the Vehicle. And in old security system if the Vehicle is stolen then it is out of the owner control. User doesn't have any awareness about the current location of the vehicle	CAN	
3	Design of vehicle bus data acquisition and fault diagnosis system (black box)	This project is an implementation of black box for vehicular safety based on LPC2129 controller. When the vehicle is started some initial routine tests are conducted. These tests check some critical parameters like seat belt, brake test, GSM test etc. The vehicle can be started only if it passes all these tests. Once the vehicle is started, we can control its speed and direction with smart phone. Meanwhile the controller records continuously different parameters like temp, reading from ultrasonic sensor, readings from pressure sensor etc into EEPROM. Whenever there is any accident, this information is sent with the help of GSM modem to the concerned person. Thereafter, the latest saved vehicle parameters are displayed on the LCD. This demonstration shows how to effectively collect and manage information obtained from car black boxes in vehicular networks using smart phones. The car black box is a vehicle-based smart phone which detects sound, speed, and time and accident spot. These data can be used for accurate car accident investigation and some public crimes prevention. Critical video clips in the black box are hashed to provide data integrity before being transmitted to the police server. Without VANET infrastructure, smart phones are very useful communication media for car black boxes. However, there are important issues such as user privacy and a data management for a vehicle-based smart phone records. The proposed evidence collection system can reduce driver privacy concerns and communication and management overheads. Our contribution is that we propose a feasible and useful scenario for public safety	CAN	
4	Data acquisition system with controller area network and sd card.	This project implements a high speed **data acquisition system** using LPC2129 controller and a **Controller Area Network** (CAN). Recording data is essential to testing and developing a racecar. Recording what each sensor is doing can tell an engineering how the car is performing, and how to make it faster	CAN	
5	Simulated Analysis on the Automobile Body Electrical Control System Based on CAN-LIN Bus	With the CAN/LIN network using in the Automobile Body Control System widely, in order to economically achieve the reliable communication in the vehicle, this article has designed a communication gateway based on ARM. This scheme introduces characteristics of ARM controller and the CAN receiver in particular, achieved the software and hardware design of the CAN/LIN gateway. The body network control system is achieved the data sharing sufficiently in the communication of networks	CAN	
6	Online distribution of self induction motor monitoring system based on arm and can bus	This paper presents an on-line distributed induction motor monitoring system based-on the ARM (Advanced RISC Machines), which is integrated with the embedded and CAN (Controller Area Network) bus technologies. The hardware structure of the system with the ARM controller LPC2129 and CAN bus controller MCP2510 is introduced, the accomplishment of software of motor on-line monitoring system is also described. Compared to the complicated construction and low integration of traditional motor testing systems, this system has a reasonable structure with less external expansion units, and can carry out data transmission in real time, effectively, and with lower power cost and more reliability.	CAN	
7	Measurement and Control System of Soil Moisture of Large Greenhouse Group	In modern greenhouses, several measurement points are required to trace down the local climate parameters in different parts of the big greenhouse to make the greenhouse automation system work properly. Cabling would make the measurement system expensive and vulnerable. Moreover, the cabled measurement points are difficult to relocate once they are installed. Thus, a Wireless Sensor Network (WSN) consisting of small-size wireless sensor nodes equipped with radio and one or several sensors, is an attractive and cost-efficient option to build the required measurement system	CAN	

	Based on CAN Bus			
8	Remote Monitoring and Diagnosis System for Wind Turbines Based on CAN	Wind energy is one of the important renewable energy sources which could reduce the emission of carbon dioxide in order to improve the current severe situation of environment. Therefore, more and more attentions are focused on wind power generation. However, almost all wind turbines work in harsh and unattended environment, then condition monitoring as well as fault diagnosis is crucial to keep the wind turbines running. In this paper, a remote monitoring and diagnosis system for wind turbines based on controller area network (CAN) is presented. The monitoring parameters and the system framework and design of CAN interface are described in detail.	CAN	
9	Research on an Integral Driving Controller Based on DSP for Robot Moving Joints	A two-level controlling structure with a top core controller and a bottom moving controller for robot controlling system is brought out according to control demands of intelligent robot. Duties of the top level and the bottom level are to finish upload of joints information and orders of moving instruction based on CAN bus. The system mainly adopted high-speed DSP, IPM power intelligent module, photo-electrical encoder and DC motor to build a hardware circuit of the integral driving controller for robot moving joints and then the software design was finished. The simulation results show that the integral driving controller simplifies the levels relation, increasing response speed and total integration of robot system. The controller realizes driving control incorporation for robot's moving joints.	CAN	
10	A CAN based Distributed Control System for autonomous all terrain vehicle	Control area network is a network system for connecting different nodes and controlling it by transferring data from one node to another. Here the mode of data sending will be from each and every nodal address mostly can bus is used for automobiles, industrial application and controls. Here in our project we are going to display data on display boards using CAN network. We have to display different types of data at different location this can be controlled and managed from one place. The main intension of using CAN for this purpose is it can transfer data for longer distances, no data corruption and a better acknowledgement with faster response. This will consume very less power compared to another network connection we give a specific address to each and every location where the CAN node is fixed with this specific address each is communicated. The data what we want to display will be predefined one and that is transmitted to the location after transmit we can get an acknowledgement from that place that the complete data s was received if any of the lines are been disconnected on tampered then the response connection for the two can node will be in faulty manner indicated no data could be transmitted.	CAN	
11	The design of a vehicle network using can/lin gateway based on arm	With the CAN/LIN network using in the Automobile Body Control System widely, in order to economically achieve the reliable communication in the vehicle, this article has designed a communication gateway based on ARM.This scheme introduces characteristics of ARM controller and the CAN receiver in particular, achieved the software and hardware design of the CAN/LIN gateway. The body network control system is achieved the data sharing sufficiently in the communication of networks	CAN	
12	Design of online interactive data acquisition and control system for embedded realtime applications	Design of on-line embedded web server is a challenging part of many embedded and real time data acquisition and control system applications. The World Wide Web is a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billion of users worldwide and allows the user to interface many real time embedded applications like data acquisition, Industrial automations and safety measures etc.It approached towards the design and development of on-line Interactive Data Acquisition and Control System (IDACS) using ARM based embedded web server. It can be a network, intelligent and digital distributed control system. Single chip IDACS method improves the processing capability of a system and overcomes the problem of poor real time and reliability. This system uses ARM7 Processor portability with Real Time operating system (RTOS) it makes the system more real time and handling various processes based on multi tasking and reliable scheduling mechanisms. Web server application is ported into an ARM processor using embedded `C' language. Web pages are written by Hyper text markup language (HTML); it is beneficial for real time IDACS, Mission critical applications, ATM networks and more	CAN	

13	A Multichannel Temperature Acquisition System Based On Arm 7 & CAN	The paper presents a new type of multi-channel temperature acquisition system combined the Can bus communications technology. The system real-timely tests and controls information which is passed by the Can bus. According to the control information, it collects multi-channel temperature, then passes the temperature signal to total controller by the Can bus. The hardware and program flow is also presented. Experiments shows, this system has the advantage of collection temperature precise, high reliability, and communication distance. So it can be widely used in various industrial controls	CAN	
14	Data acquisition system with controller area network and sd card	This project implements a high speed **data acquisition system** using LPC2129 controller and a **Controller Area Network** (CAN). Recording data is essential to testing and developing a racecar. Recording what each sensor is doing can tell an engineering how the car is performing, and how to make it faster	CAN	
15	Smart And Secure Environment For Automobiles Using Can Protocol	This project is an implementation for smart and secure environment of car based on ARM7 controller. When the vehicle is started some initial routine tests are conducted. These tests check some critical parameters like seat belt, brake test, CAN test, lane detection, GSM test etc. The vehicle can be started only if it passes all these tests. Meanwhile the controller records continuously different parameters like temp, reading from ultrasonic sensor, lane detection, readings from pressure sensor etc into EEPROM. Whenever there is any accident, this information is sent with the help of GSM modem to the concerned person. Thereafter, the latest saved vehicle parameters are displayed on the LCD.	CAN	
16	A Modified remote control car that drives autonomously between lanes and avoids forward collisions	This project detects the lane and avoids the accidents by using proximity sensor and ultrasonic sensor. In this project we are detecting the lane and if the car crosses the lane it indicates the car has crossed the lane. After analyzing functional requirement of the autonomous smart car, designed the key hardware and software of the autonomous smart car. It took the microchip as the controller, and used camera and ultrasonic sensor for the lane navigation. At the same time, it used DC motor for control driving and steering, and the GSM module was adopted to design the wireless communication module. The key algorithm about recognizing navigation lane and movement controlling method was proposed, including path extraction and controlling algorithms. The test indicated the autonomous smart car had a good and stable performances the main objective of this project is to avoid crossing the land and to avoid accidents.	CAN	
17	Smart Conveyor With Colour Sense And Dimension Analysis	Conveyors are nowadays are becoming more common in the industry for easing the work load, to save transportation time and to reduce the labor required for the work to be done. Since their uses are in many ways they can be fine tuned for different needs. Here we are using multiple sensors like Colour and Ultrasonic sensor to analysis the object on the conveyor	CAN	
18	Wireless Multi-Sense base Environmental Airflow Control System System	Airflow Control System is a system that automatically controls the direction of the air flow and its speed depending on the environmental temperature and chemical content of the air. This system is designed to controls the flow of air which in turn maintains a balanced temperature, prevent high temperature and hazardous gas accident from ventilating it out of the evironment in a efficient manner	CAN	

19	Smart and secure environment for automobiles using can protocol	Motor vehicle keys have sometimes been unconvincing basically based on the following facts: The keys can easily be locked in the vehicle or misplaced, leading to the unattractive alternative of breaking the door in the former case or re modifying the ignition system in the latter case. The vehicle can also be easily driven away by someone who manages to get access to the keys the fingerprint based ignition therefore provides a wonderful solution to the above inconveniences	CAN	
20	Highway Cruise Control Using RF-id Technology and CAN Protocol With Parental Lock for Automotive	These days, mass-produced vehicles benefit from research on Intelligent Transportation System (ITS). One prime example of ITS is vehicle Cruise Control (CC), which allows it to maintain a pre-defined reference speed, to economize on fuel or energy consumption, to avoid speeding fines, or to focus all of the driver's attention on the steering of the vehicle. However, achieving efficient Cruise Control is not easy in roads or urban streets where sudden changes of the speed limit can happen, due to the presence of unexpected obstacles or maintenance work, causing, in inattentive drivers, traffic accidents. In this communication we present a new Infrastructure to Vehicles (I2V) communication and control system for intelligent speed control, which is based upon Radio Frequency Identification (RFID) technology for identification of traffic signals on the road, and high accuracy vehicle speed measurement . Cruise control(sometimes known as speed control or auto-cruise) is a system that automatically controls the speed of a motor vehicle. The system takes over the throttle of the car to maintain a steady speed as set by the driver	CAN	
21	Design of online interactive data acquisition and control system for embedded realtime applications	Design of on-line embedded web server is a challenging part of many embedded and real time data acquisition and control system applications. The World Wide Web is a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billion of users worldwide and allows the user to interface many real time embedded applications like data acquisition, Industrial automations and safety measures etc.It approached towards the design and development of on-line Interactive Data Acquisition and Control System (IDACS) using ARM based embedded web server. It can be a network, intelligent and digital distributed control system. Single chip IDACS method improves the processing capability of a system and overcomes the problem of poor real time and reliability. This system uses ARM7 Processor portability with Real Time operating system (RTOS) it makes the system more real time and handling various processes based on multi tasking and reliable scheduling mechanisms. Web server application is ported into an ARM processor using embedded `C' language. Web pages are written by Hyper text markup language (HTML); it is beneficial for real time IDACS, Mission critical applications, ATM networks and more	CAN	
22	ISO Standard CAN Protocol implementation on ARM7TDMI Controller	In this project we make use of a Microprocessor with in-built CAN protocol, CAN bus and devices like speed sensors, brake controlling module, Lane Detector Module, steering angle sensor and RF detector which are connected to the CAN bus.Here whenever the speed exceeds the limit, the speed sensor will indicate by sending a message on the bus, which will be received by the brake control module, which in turn act on that resulting in reducing the vehicle speed gradually. Whenever the vehicle crosses the lane, the lane detector module will indicate by sending the message on the CAN bus, which is received by the steering angle sensor, which brings back the vehicle with in the lane. A RF detector is used to maintain some distance with the preceding vehicle. The whole operation is controlled by CAN controller i.e., it will monitor all the messages on the CAN bus and in turn act on them based on the priority.The Controller Area Network (CAN) is a serial communications protocol, which efficiently supports distributed real-time control with a very high level of security. Its domain of application ranges from high speed networks to low cost multiplex wiring.In automotive electronics, engine control units, sensors, anti-skid-systems, etc. are connected using CAN with bit rates up to 1 Mbit/s. At the same time it is cost effective to build into vehicle body electronics, e.g. lamp clusters, electric windows etc. The ARM7 processor is a member of the ARM family of general-purpose 32-bit microprocessors. The ARM family offers high performance for very low-CAN power consumption and gate count	CAN	
23	Designing of Device Driver for CAN Protocol Using ARM7 Architecture	A hu CAN man interface device or HID is a type of computer device that interacts directly with, and most often takes input from, humans and may deliver output to humans. The term "HID" most commonly refers to the USB-HID specification. As industrial automation comes more and more robust nowadays, wired and wireless technologies compete in this field. Both wired and wireless technologies have their own advantages and disadvantages. In one hand, wireless technologies reduce the hardware complexity, whereas the wired technologies increase the data transmission speed. Such a case where data transmission speed is considered as the important factor, lead to the development of this project.USB, a wired serial communication protocol, is having a high speed data transmission rate and as it is a serial communication, it has less hardware complexity. So by adopting USB as the communication technique, we developed an Industrial Control unit called USB Human Interface Device. In this project a user can control any device in an industry by just a click of mouse from his Laptop/ PC. As the communication is through USB, it is faster and errorless. As USB does not restrict the number of devices to be connected on to the bus, we can connect as much as devices to the bus	CAN	

24	Can controlled accident avoidence system	A collision avoidance system is a system of sensors that is placed within a car to warn its driver of any dangers that may lie ahead on the road. Some of the dangers that these sensors can pick up on include how close the car is to other cars surrounding it, how much its speed needs to be reduced while going around a curve, and how close the car is to going off the road. The system uses sensors that send and receive signals from things like other cars; obstacles in the road, traffic lights, and even a central database are placed within the car and tell it of any weather or traffic precautions. A situation that provides a good example of how the system works is when a driver is about to change lanes, and there is a car in his blind spot. The sensors will detect that car and inform the driver before he starts turning, preventing him from potentially getting into a serious accident.Ultrasonic sensor is adapted to measure the distance with respect to the previous car. For rear-end end collision avoidance subsystem, the currently available ultrasonic sensors for vehicles are adopted for approaching cars with relatively low speed. While the rough reading of distance data cannot be applied directly, an intelligent approach is proposed to process the raw distance readout of sensors to produce appropriate warning signals. We also include the alcoholic sensors in it to monitor the person in the car; if the person appears to be drunk the transmission will be automatically switched off	CAN	
25	Design of Vehicle Safety System with Double Active belt system and ABS	In this project we make use of a Microprocessor with in-built CAN protocol, CAN bus and devices like pressure sensors (potentiometer for demo purpose) will be connected to the CAN bus.Here whenever the an accident occurs, the pressure sensor will indicate by sending a message on the bus, which will be received by the airbag control module, which in turn act on that resulting in blowing the airbag on. The whole operation is controlled by CAN controller i.e., it will monitor all the messages on the CAN bus and in turn act on them based on the priority. The Controller Area Network (CAN) is a serial communications protocol, which efficiently supports distributed real-time control with a very high level of security. Its domain of application ranges from high speed networks to low cost multiplex wiring. In automotive electronics, engine control units, sensors, anti-skid-systems, etc. are connected using CAN with bit rates up to 1 Mbit/s. At the same time it is cost effective to build into vehicle body electronics, e.g. lamp clusters electric windows etc. To replace the wiring harness otherwise required. The ARM7 processor is a member of the ARM family of general purpose 32-bit microprocessors. The ARM family offers high performance for very low-power consumption and gate count.	CAN	
26	Designing of Advance, Flexible, Informative and User Friendly CAN based Information Display System for Automobiles of the future	In The area of AUTOMOBILES implementation of the DASH BOARD is of vital concern, this project is produces to implement dashboard for automobiles using Controller Area Network (CAN) protocol. The principle and working of the CAN protocol is analysed. The working principle is illustrated, and finally the hardware and software design is outlined	CAN	
27	Designing of Device Driver for CAN Protocol Using ARM7 Architecture	A human interface device or HID is a type of computer device that interacts directly with, and most often takes input from, humans and may deliver output to humans. The term "HID" most commonly refers to the USB-HID specification. As industrial automation comes more and more robust nowadays, wired and wireless technologies compete in this field. Both wired and wireless technologies have their own advantages and disadvantages. In one hand, wireless technologies reduce the hardware complexity, whereas the wired technologies increase the data transmission speed. Such a case where data transmission speed is considered as the important factor, lead to the development of this project. USB, a wired serial communication protocol, is having a high speed data transmission rate and as it is a serial communication, it has less hardware complexity. So by adopting USB as the communication technique, we developed an Industrial Control unit called USB Human Interface Device. In this project a user can control any device in an industry by just a click of mouse from his Laptop/ PC. As the communication is through USB, it is faster and errorless. As USB does not restrict the number of devices to be connected on to the bus, we can connect as much as devices to the bus.	CAN	
28	CAN CONTROLLED ACCIDENT AVOIDENCE SYSTEM	A collision avoidance system is a system of sensors that is placed within a car to warn its driver of any dangers that may lie ahead on the road. Some of the dangers that these sensors can pick up on include how close the car is to other cars surrounding it, how much its speed needs to be reduced while going around a curve, and how close the car is to going off the road. The system uses sensors that send and receive signals from things like other cars; obstacles in the road, traffic lights, and even a central database are placed within the car and tell it of any weather or traffic precautions. A situation that provides a good example of how the system works is when a driver is about to change lanes, and there is a car in his blind spot. The sensors will detect that car and inform the driver before he starts turning, preventing him from potentially getting into a serious accident. Ultrasonic sensor is adapted to measure the distance with respect to the previous car. For rear-end end	CAN	

		collision avoidance subsystem, the currently available ultrasonic sensors for vehicles are adopted for approaching cars with relatively low speed. While the rough reading of distance data cannot be applied directly, an intelligent approach is proposed to process the raw distance readout of sensors to produce appropriate warning signals. We also include the alcoholic sensors in it to monitor the person in the car; if the person appears to be drunk the transmission will be automatically switched off.		
29	Design and Implementation of Multi CAN Network for Automotive communication protocol	In this project we make use of a Microprocessor with in-built CAN controller, CAN bus and devices like speed sensors, brake controlling module, Lane Detector Module, steering angle sensor and RF detector which are connected to the CAN bus.Here whenever the speed exceeds the limit, the speed sensor will indicate by sending a message on the bus, which will be received by the brake control module, which in turn act on that resulting in reducing the vehicle speed gradually. Whenever the vehicle crosses the lane, the lane detector module will indicate by sending the message on the CAN bus, which is received by the steering angle sensor, which brings back the vehicle with in the lane. A RF detector is used to maintain some distance with the preceding vehicle. The whole operation is controlled by CAN controller i.e., it will monitor all the messages on the CAN bus and in turn act on them based on the priority.The Controller Area Network (CAN) is a serial communications protocol, which efficiently supports distributed real-time control with a very high level of security. Its domain of application ranges from high speed networks to low cost multiplex wiring. In automotive electronics, engine control units, sensors, anti-skid-systems, etc. are connected using CAN with bit rates up to 1 Mbits/sec. At the same time it is cost effective to build into vehicle body electronics, e.g. lamp clusters electric windows etc. To replace the wiring harness otherwise required.The ARM7 processor is a member of the ARM family of general-purpose 32-bit microprocessors. The ARM family offers high performance for very low power consumption and gate count	CAN	
30	Designing of Hybrid fuel system for vehicles using Fuel Cell with CAN Protocol for communication	In this project we make use of a Microprocessor with in-built CAN controller, CAN bus and devices like temperature sensors, Fuel Level Sensor, Voltage Level Sensor, Gear Position Sensor, Rain Sensor, Light Intensity sensor, and door position sensor, which are connected to the CAN bus. On the other side, controlling units like wiper control, light control, cooling system, and Energy source selection is also connected.Here the speed sensor will send the speed of the vehicle continuously through the CAN bus and it will be displayed on the dashboard. The gear position sensor will send CAN message indicating the current position of the gear. Fuel level and battery levels will be monitored continuously. If the fuel level is low, it will be switched to battery and if the battery level is low, energy source will be switched to fuel. The whole operation is controlled by CAN controller i.e., it will monitor all the messages on the CAN bus and in turn act on them based on the priority.The Controller Area Network (CAN) is a serial communications protocol, which efficiently supports distributed real-time control with a very high level of security. Its domain of application ranges from high speed networks to low cost multiplex wiring. In automotive electronics, engine control units, sensors, anti-skid-systems, etc. are connected using CAN with bit rates up to 1 Mbits/sec. At the same time it is cost effective to build into vehicle body electronics, e.g. lamp clusters electric windows etc. To replace the wiring harness otherwise required.The ARM7 processor is a member of the ARM family of general-purpose 32-bit microprocessors. The ARM family offers high performance for very low power consumption and gate count.	CAN	
31	Automation of Home Application for Elder and Physically Challenged using RF and CAN	The main aim of this project focuses on making it possible for elderly and disabled people to control the things at the home automatically. This form of home automation (called assistive domotics) is meant for the elderly and disabled to live at home and still be safe and comfortable. There are two basic forms of home automation systems for the elderly peoples. Embedded Health Systems and Private Health Networks. Embedded Health Systems integrate sensors and microprocessors in appliances, furniture, and clothing which collect data that is analyzed and can be used to diagnose diseases and recognize risk patterns. Private Health Networks implement wireless technology to connect portable devices and store data in a household health database. Home automation is becoming a viable option for the elderly and disabled who would prefer to stay in the comfort of their home rather than move to a healthcare facility. This field uses much of the same technology and equipment as home automation for security, entertainment, and energy conservation but tailors it towards the elderly and disabled. For example, home automation includes all that a building automation provides like doors, window controls, health monitoring system and security etc	CAN	

SPI

NO	PRJ TITLE	ABSTRACT	DOMAIN	YOP
1	Analysis of precrash data transferred over the serial data bus and utilized by sdm-ds module	The primary function of an airbag control module is to detect crashes, discriminate and predict if a deployment is necessary, then deploy the restraint systems including airbags and where applicable, pretensioners. At some automotive companies, the internal term for airbag control module is Sensing and Diagnostic Module (SDM). A secondary function of that SDM and all subsequent SDMs is to record crash related data. This data can include data regarding impact severity from internal accelerometers and pre-crash vehicle data from various chassis and powertrain modules. Previous researchers have addressed the accuracy of both the velocity change data, recorded by the SDM, and the pre-crash data, but the assessment of the timing of the pre-crash data has been limited to a single family of modules. This paper addresses the operation and performance of another family of SDMs; the SDM-DS and its utilization of the Class 2 intra module serial communication bus	SPI	
2	Implementation of Network Communication Device Driver for Samsung S3CEV40 based on ARM7 Architecture	In this project RTL 8019as Ethernet controller TCP/IP communication is implemented. In the EMBEST S3CEV40 development board Samsung s3c44box controller is used with ARM 7 TDMI core. This board can be used for developing different kind of applications and having some DSP featured Ics also. The VOIP is implemented here by using on board peripherals; the voice is received from a microphone through UDA 1341TS AUDIO CODEC IC in coded form.The sound will be digitized and that should be packetized. So, RTL8019AS will do this TCP/IP conversion.Through S3CEV44 box control the codec data and which is converted into IP format and in fed to the network. The router in the network will also do the job of routing voice packets to the destination. At the other end the data is received through a VIOP enabled PC or ARM board and the data is decoded to get the voice	SPI	
3	Development of SPI Driver for Graphical Display System on ARM7TDMI	This project documents the implementation of graphical LCD by using ARM7 processor device drivers. Increasing demand of mobile hand held devices leads to the development of technology like graphical LCD. LCD (Liquid Crystal Display) is mainly used in displaying text and graphic information. The LCD device is highly popular for human interface development due the fact that the device is thin, small size, low power, no radiation etc. As mentioned above, in this projects are implementing graphical LCD by using ARM7 for various hand held mobile applications	SPI	
4	RS-485 based multi axis motor controller .	RS485 based multi axis motor driver/controller has been developed around LMD18245. This system is developed keeping in mind varying requirements of the users for various applications i.e. from single axis to multiple axes with current rating of 200 mA to 3 Amp. The required current may be set in 16 discrete levels. Single card with all the hardware space for controller as well as driver has been designed. Depending on the use, hardware may be put on it. This application report focuses on the benefits of using RS-485 signaling for motor control and motion control applications. This technology has several benefits for these applications in terms of noise immunity, wide common-mode voltage range, adequate data rate, and multipoint capability. Other applications also use RS-485 signaling to take advantage of these same benefits. Applications such as process control networks, industrial automation, remote terminals, building automation and security systems apply RS-485 extensively to solve their requirements for robust data transmission over relatively long distances.	RS 485	
5	Design of the Multi-computer Communication System Based on RS485	A system design of PC and more practical master-slave control system was introduced, using Multi-computer and PC complete the communication. The hardware and software system design were given. The experiment was carried out, and the result shows that this system has advanced , practical and good reliability	RS 485	