

DISPLAY SYSTEM FOR MARINE WORKERS

¹ NimmySudharsanan, ². Christin Markose

¹ PG Scholar, ², Professor,

¹ ECE Dept,

¹ Rajadhani college of Engg. Trivandrum dist, Kerala, Indian

Abstract : the digital displays provide greater advanced solutions for today's advertisement boards. The display system can be controlled and monitored using internet. Now a day's various types of display boards can be seen on schools, colleges, railway stations, shopping malls etc. Majority of the advertisements are now given through these kinds of display boards so that it may reach large number of audience. Through these display boards we can get so many information such as train platform number, ticket information at our finger tips. But we cannot find such a display system for the ease of marine workers. So I am doing this project in order to provide an alert system /display system to help the marine workers to overcome from some of the natural calamities .The components used for the projects are the following: Temperature/Humidity sensor; to determine the temperature and humidity of the surroundings and get displayed on the display board. Flow sensor; to determine the wind flow rate .If the wind speed is greater than 45 km/hr, it will give an alert message to the prescribed number that we are provided in the web server. The GPS/GSM module is used to determine the current location of ships (latitude, longitude).The controller we used here is ATmelAtmega 328.Here we are using cloud connectivity so that it can be accessed world wide .The platform we used is arduino board; as it is cost effective, contains on board power supply and can be programmed and connected to the system without any PCB design and implementation.

IndexTerms – Display Board, GSM Module, GPS

I. INTRODUCTION

The display systems are provided to catch the audience attention more easily .While displaying through these large boards people will get a greater attention from a distance. As technology is changing day by day written type notice for publishing important information have been changed to these types of digital displays. Most of the advertisements for shops, buildings are given through these kind of boards .mainly the display boards are seen on road side , railway stations ,bus stops etc that is where is the crowd is higher. As the advertisements are given through these types of boards market value get increased to a greater extend. Important information such weather updates, city news date and time are also displayed here. In railway stations we can see these types of display boards where people will able to know their ticket information, live PNR status of train, current running position of train etc.So these kind of display are providing a good aid to public. Now a day's schools and colleges are using these techniques to give important announcements. For example for result publishing, assembly announcement etc.

Marine accidents are common these days. These accidents can occur due to many reasons such as collisions, sinking and explosions etc.Some of the ship accidents can also occur due to human fault and negligence .However 70% of these accidents is mainly due to natural calamities, so proper awareness of these natural calamities should be provided in order to save many of the human life. In most cases these types of accidents occur near deep sea side .so it become difficult to find out the ships for the rescue team members. So if we are fixing a GPS module, we will be able to find out the proper location of ships .In this work we mainly focus to provide an awareness to the team workers about the nature of the surroundings such as temperature and humidity of the desired location and also to determine the wind flow rate and if the wind flow rate is higher than the set up value it will give an alert to the person through SMS, thereby they can take appropriate measures to prevent them from unwanted accidents. All these information such as temperature and humidity of a place, flow rate and also the location of ship's get displayed on the display board which is located near the sea shore. Since all the information gets displayed on the board public will get up to date information about the things happening around the display system is a great option to catch people's attention. The project is done on the basis of cloud connectivity so it can be accessed from any where they have internet connectivity.

Internet of things refers to the network of physical objects that is connected with so many sensors, electronic devices, and software and provides network connectivity that allows the objects to collect and exchange data. The life cycle of internet of

things include collection, communication, analyzation and action. In collection process sensors or devices collect data from the home, office, manufacturing plant etc. The next stage is communication here the collected data is given to the desired destination. The third stage is analysis that is the proper information is filtered from the data. The final stage is the action which implies that proper action is taken on the basis of information and data which include communicate with another system or sends a notification through SMS or email

II.LITERATURE REVIEW

[1] 2016 BhupeshAneja, ChhaviSrivastav, KartavyaFarashwal, Ajey Aditya “Wireless Electronic Display Board Using GSM Technology”. This paper says about the operation of wireless electronic display boards using GSM technology. With the help of the proposed system updates can be made with mobile. So that new notices can be displayed on the board through a simple SMS. This system contains a microcontroller and a GSM modem for getting the message and take necessary steps for the display purposes. Microcontroller and GSM module is synchronized through AT commands. This system eliminates the demerits of paper based notice boards. This system has some draw backs such as it does not display about the weather or climatic conditions.

[2] 2014 MayurR.Bhoyae, SurajChavhan, VaidehiJaiswal “Secure Method Of Updating Notice Board With Pc Monitoring System”. It is a wireless system that has minimal amount of error and also the maintenance cost is also less. The microcontroller used here is AT89c52. The microcontroller is interfaced through GSM through MAX232. To display the time real time clock is used. For the display we are using a 16*2 character LCD which is attached to the microcontroller. Programming is done using embedded C and Keil. The users are assigned password for accessing the current system. In this system also it does not contain any information such as climatic conditions, weather forecast and does not include a GPS module for tracing the location.

[3] 2016 Avhad Jyotis S, Bhavar Vedika S, Chavhan Sneha K, Dhole Tushar R, & Prof. Jagadish Y “Real Time Digital Notice Board on Cloud Platform.” This system enables to display notices on the display board using Bluetooth with mobile phone. The users will get notified when ever new messages get displayed on the board. As it provide cloud connectivity it can be accessed from anywhere. The microcontroller used here is ATMEGA 328. The programming is done using C language. Whenever an user sends a new notice to the display board using the registered phone that particular message get displayed on the board. Since it provides cloud connectivity other users also get notified on their phone. In this system also it does not include any location details and also weather and climatic conditions of the surroundings.

III.METHODOLOGY

Display system for marine workers is a system designed explicitly for the sake of marine workers. In these days marine accidents rates are increased. Mainly these accidents are due human errors and also due some natural calamities. So in order to avoid these we designed such a system. The components included in this system are flow sensor, temperature/humidity sensor, arduino board GPS module and power supply. The component in this system is connected by the arduino Uno board. The board is powered using a dc power supply. We prefer this arduino board because it is a ready to use structure; sensor library is itself available in the software, easy to use, cost effective.

DHT11 used here measures the temperature and humidity of the surrounding region and the value will be displayed on the display board. The NTC component present in the sensor reads the temperature. It detects the water vapor by measuring the electrical resistance between the two electrodes. As water vapour is absorbed by the substrate ions get released. As a result of this conductivity get increased. Higher the relative humidity decreases the resistance between the electrodes. To measure humidity; humidity sensing component is used that has 2 electrodes with moisture holding substrate between them. As a result of this when the humidity changes the resistance between these electrodes get verified. If the values of the temperature are greater than 35 degree it will give an alert through SMS. So that we can take necessary measures when needed.

Wind flow is measured using Flow sensor. This sensor works on the principle of Hall Effect. When a current flows through the sensor a magnetic field is produced. When air flows the shaft get rotated because of this a voltage is produced. The voltage induced here is known as Hall voltage. This voltage is directly proportional to the amount of flow rate. When air flows the

reading get displayed on the board. When the flow rate is greater than 45m/hr an alert message is given to the corresponding that we are given in the web browser.

GPS module transmits data about their current location. It also specifies the correct date and time on the display board. By using this module the rescue members can immediately trace ships and locate people in need of assistance. The location is displayed in terms on latitude and longitude.

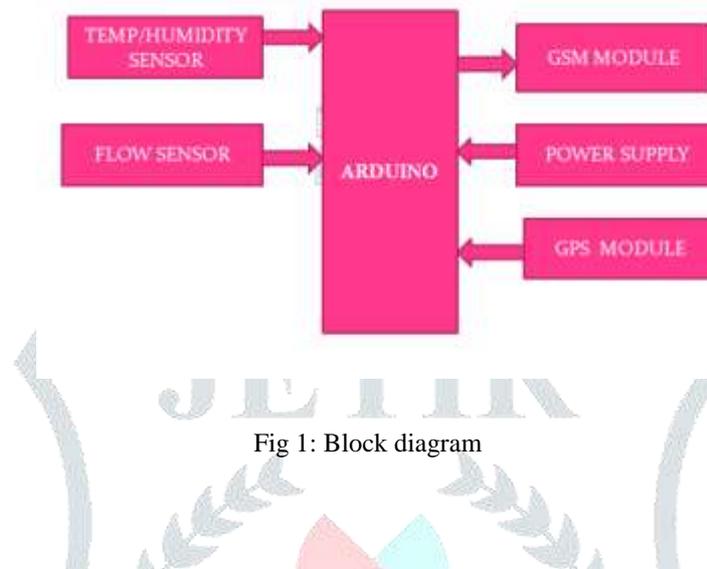


Fig 1: Block diagram

A. Flow Chart

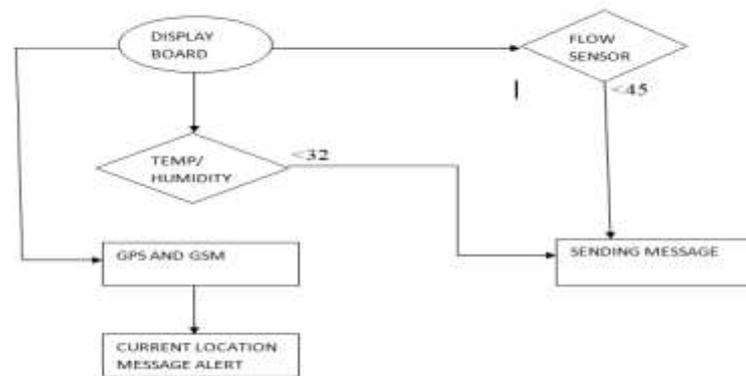


Fig 2: Flow Chart

The flow chart includes temperature/humidity sensor, flow sensor and a GPS module for the display system. Whenever the temperature of the atmosphere gets greater than 32 degree Celsius it provides and alert to the prescribed numbers. Also when the wind flow rate gets greater than 45 km/hr provides alert message. A GSM module is provided to send the alert message about the adverse atmospheric condition. The GPS module traces the current location of the marine workers when they travel to deep sea and faces any adverse weather condition. The whole data is displayed on the display board provides near the sea shore. Thus one can easily access the detailed information about the weather and ship location.

B. SOFTWARE ARCHITECTURE

The software used for the prototype development is arduino ide which can be directly downloaded from the network. The library codes for all sensors used here is readily available on the goggle server. It can be downloaded and edited for our requirement and uploaded to the arduinoUno board software is developed using pHp platform to display the location and weather details. It also displays date and time.

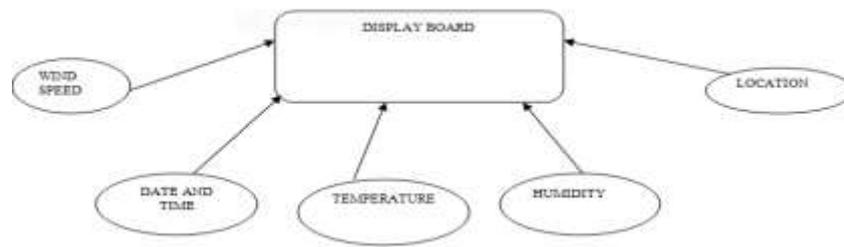


Fig 3: Display Board

IV RESULT AND DISCUSSION

In the final output we can see information such as temperature, humidity, wind speed, date and time and locations are displayed. By viewing this we will be able to determine a clear cut idea about the surroundings. In board the readings are displayed continuously with a time gap of one minute. As this system displays date and time, one can easily understand about the information displayed.



Fig 4: Screen shot of output

V.CONCLUSION

As the technology is advancing day by day important notices are now displayed on display boards so that it can catch large amount of audience attention. Here we implement a system for the sake of marine workers as it displays climatic conditions and give specific alert message in the case of any abnormalities so that they can overcome some of the unwanted disasters and display system also provide current location of ships.

REFERENCES

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