International Journal of Applied Engineering and Technology ISSN: 2277-212X (Online)
Online International Journal Available at http://www.cibtech.org/jet.htm
2020 Vol. 10, pp.235-240/Maaleni et al.
***Research Article** (Open Access)*

AIR BASED MOBILE NETWORK DISTRIBUTED SYSTEM

***R.A. Maaleni, B. Deepak, B. Vinotharan, V. Ranjith**
St. Joseph's College of Engineering and Technology

ABSTRACT
ABMNDS is an air vehicle used for mitigation in the affected area during a disaster such as a storm and tsunami. The ABMNDS drone also serves as a tool to locate lost humans in forested areas. During the natural disaster, the affected area is completely cut off. Due to this, telecommunications will be cut off. Victims cannot contact others to recover themselves and the victim is unable to call for food and other necessities. So this ABMNDS is used to correct this by transporting the drone to the affected area where a temporary mobile tower is installed and providing mobile signals. It is also used to detect lost humans in dense forests that do not have a mobile tower. They can also be used to connect others with mobile. The ABMNDS Drone is also used to detect where they are located by mobile signal.

Keywords: *Using UAV, Compact Teleportation, Communication in Difficult Situations*

INTRODUCTION
Major telecommunications providers have deployed voice and data cellular networks over most of the inhabited land area of Earth. This allows mobile phones and mobile computing devices to be connected to the public switched telephone network and public Internet. The Communication becomes unavailable during natural disasters like Tsunami, Flood etc. The main purpose of this project is to provide communication at that hard time using an air vehicles. The communication during natural disasters time, remote area communication and one to one communication. To overcome lack of communication during the flood, tsunami etc. To provide a temporary communication at Emergency situations at the low cost using air vehicles like drone or helicopter.

EXISTING SYSTEM
In this existing system they have used a **cellular network** or **mobile network** is a communication network where the last link is wireless. The network is distributed over land areas called "**cells**", each served by at least one fixed location transceiver, but more normally, three cell sites or base transceiver stations.

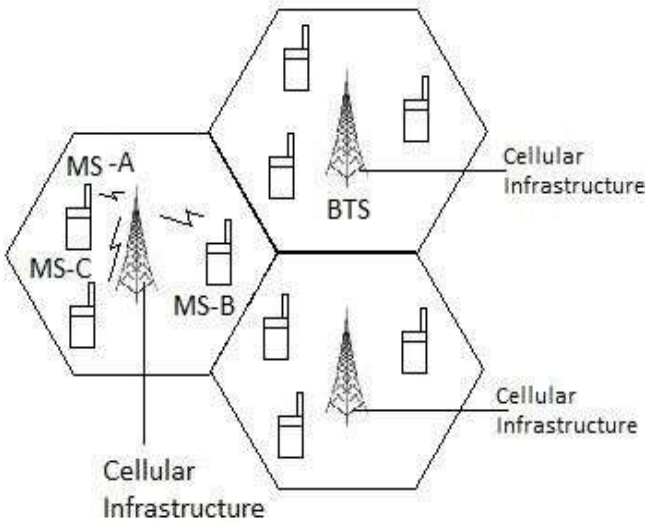

Figure 1: Block diagram of Existing System

These base stations provide the cell with the network coverage which can be used for transmission of voice, data, and other types of content.
A cell typically uses a different set of frequencies from neighbouring cells, to avoid interference and provide guaranteed service quality within each cell.
When joined together, these cells provide radio coverage over a wide geographic area. This enables numerous portable transceivers (e.g., mobile phones, tablets and laptops equipped with mobile broadband modems, pagers, etc.) to communicate with each other and with fixed transceivers and telephones anywhere in the network, via base stations, even if some of the transceivers are moving through more than one cell during transmission.
Then the installation cast is too high, It's occupied the large place, Radio frequency is high , more power will be consumed constantly and not portable.

PROPOSED SYSTEM

In this proposed system the main objective to the electricity can be disconnected a natural disaster. This can lead to disruption of teleportation. The portable mobile tower is designed to prevent this problem. The portable network tower drone (UAV- Unmanned Arial Vehicle) can be propagated to a certain height in the sky. This can be used to provide telecommunication to the affected area temporarily in case of a natural disaster such as a cellular tower break or road block.

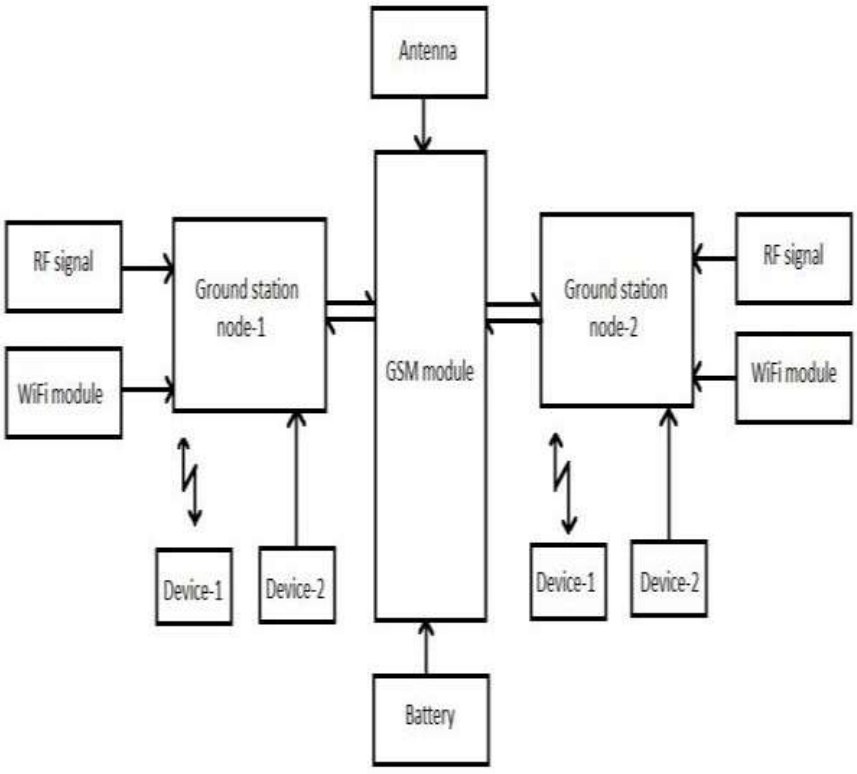

Figure 2: Block diagram of proposed system

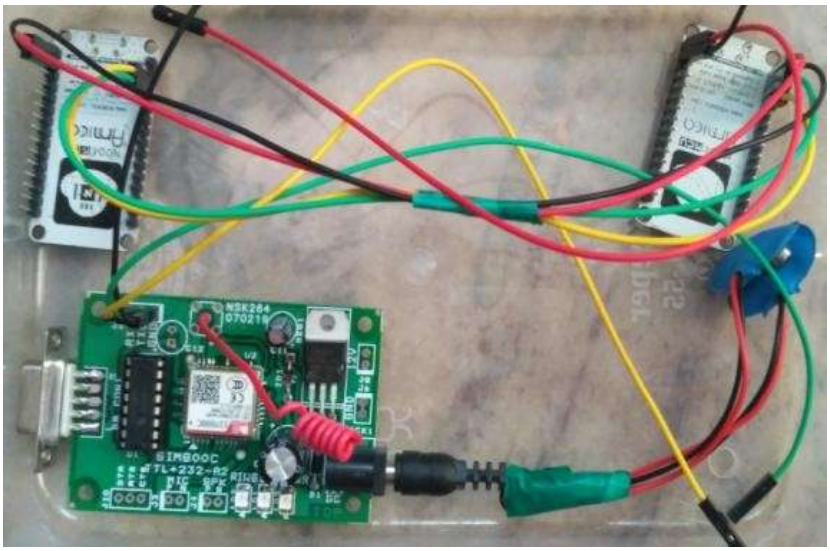

Figure 3: Model for proposed system

An one of the key features is that it can be easily moved from one location to another, which is cheaper than a normal cellular tower, and uses less power to the comparatively normal tower, no place occupied, harmful radiation less. The Communication becomes unavailable during natural disasters like Tsunami, Flood etc. The main purpose of this project is to provide communication at that hard time using air vehicles.

So this ABMNDS is used to correct this by transporting the drone to the affected area where a temporary mobile tower is installed and providing mobile signals. It is also used to detect lost humans in dense forests that do not have a mobile tower. They can also be used to connect others with mobile. The ABMNDS Drone is also used to detect where they are located by mobile signal

COMPONENTS

GSM MODULE SIM800C

SIM800C is a widely used GSM module with a serial interface modem which runs in between 4.4V voltage level.

SIM800C is a Quad band GSM/GPRS module which is used in embedded applications where the remote data transfer is required. SIM800C works on 850/900/1800/1900 MHz. It can also receive and transmit **voice call, SMS** with low power consumption. The module is controlled by using AT commands. It supports one SIM card interface and has UART (TX and RX) pins along with one RS232 serial protocol that can be used to interface with different microcontrollers in embedded applications. A DC power adapter of 12V is used to power the SIM800C GSM module. A SIM card is inserted at the back of the GSM module.

NODEMCU ESP 8266

The ESP8266 can be controlled from your local Wi-Fi network or from the internet. ESP8266 is a Wi-Fi (System on a chip) produced by Expressive Systems. It is an highly integrated chip designed to provide full internet connectivity in a small package.
The use of the ESP8266 Wi-Fi module is a self contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network. The ESP8266 is capable of either hosting an application or offloading all Wi-Fi networking functions from another application processor. At the range 5 meters -80 meters.

Figure 3a: Quad copter (UAV-Unmanned Arial Vehicle).

FUTURE ENHANCEMENT

We have designed a Quad copter drone with tower miniature model to provide communication during natural disasters time when communications get partially cut off due to damaged towers.

Figure 3b: The APM 2.8 Flight Control Board

Now we designed such drone for 20 feet height and circumference of 100 meters to provide strong communication. If more than two number of drones are used, all of them are connected using single parent drone.

As per our project, drones used is partially autonomous. Usage of drones will become high in future and it becomes fully autonomous. In future we will design drones for more feet and meters to extend our connection for large area to get rid off insufficient communication during natural disaster.

CONCLUSION

In our project is mainly focusing about the prevented to provide telecommunication to the affected area temporarily in case of a natural disaster such as a cellular tower break or road block.

REFERENCES

[1] **Basso M, Tussi Leite C.E, Pignaton de Freitas E, Wang H and Zacarias I (2018).** A Practical Deployment of a Communication infrastructure to Support the Employment of Multiple Surveillance Drone system.

[2] **Khan M A, Khan I U, Qureshi I M, Safia (2018)**. Dynamic Routing in Flying Ad-Hoc Networks using Topology Based Routing protocols.

[3] **Kumar R and Sayeed M (2018).** An Efficient Mobility Model for Improving Transmissions in Multi UAVs Enabled WSNs.

[4] **Alsamhi S H, Ansari M S and Gupta S.K**. (2019). Collaboration of Drone and Internet of Public Safety Things in Smart Cities;An Overview of QoS and Network Performance Optimization,.

[5] **Khan M A, Khanzada f and Qureshi I M (2019)**.
A Hybrid Communication Scheme for Efficient and Low cost Deployment of Future Flying Ad-Hoc Network (FANET),

International Journal of Applied Engineering and Technology ISSN: 2277-212X (Online)
Online International Journal Available at http://www.cibtech.org/jet.htm
2020 Vol. 10, pp.235-240/Maaleni et al.
***Research Article** (Open Access)*