Dissertation Topic

On

A Survey Study on Natural Disaster management technologies and systems

Submitted to

LOVELY PROFESSIONAL UNIVERSITY

Submitted By
Gautam Marwaha
Reg. No- 11401744

Supervised By
Mr. Parvesh Mor

LOVELY FACULTY OF TECHNOLOGY & SCIENCES
LOVELY PROFESSIONAL UNIVERSITY
PUNJAB
April 2014

Acknowledgement

First and foremost I would like to thanks to kind people around me because, it would not be possible to write this paper without their help and support.

It would not be possible for me to write this paper without the help, support, patience and friendship of my principal supervisor Mr Parvesh Mor has been invaluable for which I am extremely grateful.

I would like to acknowledge the academic and technical support of the Lovely Professional University of Phagwara, and its staff. The library facilities and computer facilities of the University have been indispensable.

For any errors or inadequacies that may remain in this work, of course, the responsibility is entirely my own.

Index

Introduction

Natural disaster means an unfriendly action or process that has been occur automatically or by itself from the earth. For example forest fires, oil spills, earthquakes, floods and tsunami etc. Because of these disasters human life get disturb. Hundreds of people lost their lives, Millions of them become homeless or they may separate from their families and loved ones due to these disasters. Global warming is the key issue behind these disasters in the world. Because of global warming hot days are increasing and cold days are decreasing day by day as compare to previous decades.

But these disasters can be reduce by giving quick help at an effective area for this we need a management system which is known as disaster management system (DMS).Disaster management system will help us in all the stages like pre planning, during disaster, post planning. It can help us to save the lives of the people.

Literature Review

Naveed Ahmad et.al discuss about-wireless networks technologies to response the emergency response. If there any disaster condition is happened. In the existing network model. They purpose the system using MANET's in the each node is connected. Each node has its own cluster area. It transmit the data from one node to another node with the help of sink node and then sink node send data to the base station from the base station. It send data emergency incident response data base system server. Then its server responsible to send the data to the different area to help on reserve the operation area, like the data is received by the mobile ambulance on nearly has piton or the rescue team. this disadvantage of network model is that .if the disaster is occur then the base station of that area is destroyed on some conflict is occur then it unable to send the data.[4]

So another proposed that in that condition used the GSM or Wimax method to send the data to different location. In this the author focuses on supposed a based system .It help the rescue to operation move to the new trends in the previous system. There where will rescue team take time to reach the place where the disaster is occur with the help of WISTA (wireless telemedicine system for treatment). Their research main focus on the various medical wireless sensor system of different paramount with the help of that we can easily check the heartbeat, BP, glucose level, ECG report or pulse rate.

The sensor is attached with tiny micro control chips which is work as small CPU sensor which is help to send the data of effected person to the rescue team with help they can provide for facility to that person easily .In the positive medicine model focus in the time or every consumer faction . In that we decrease the cell instead of six nodes it connected to four nodes only. So it is fast nodes only that why it is fast to send data. [3]

Varsha et.al, discuss about the application of android to help the effected person in the disaster. In that application they established a function in which first user have id on that application (natural disaster monitor or register in that with person

mobile number who help them in some critical condition. when a user trapped in the disaster area with use of app it simply write some text and click on send button with the help the message is send to the other people with he/she can register with the location of victims or path to reach the victims to save their life . The location or path so send by the Google map or GPS with their – the Location of victims to save their life .The Google map or GPS with the help these a message will send. Application also provide alert or notification to the user regarding any weather condition is bad on you can say manual notification .In this app we can also check the weather for coming next days. [5]

Pedro J. Saco *et.al.*discussed Architecture of framework for the management of natural disaster Layout of any emergency system will only successful if manager is able to understand this procedure or the correct information or data. If the procedure will be too complicated than it will not be easily understandable therefore for natural disaster management or in easy words some kind of DSS system is required as MCDA (Multi criteria Decision Analysis).The architecture incorporates a collection of general purpose web services that collaborate in the implementation of MCDA procedures. Research needs related to both well-known OGC specifications and other required services were also identified during the design of the architecture. [1]

Jayanta Kumar gash et.al discuss about the landslide hayard warning system in the landslide warning system are developed with the help of internet and available in mobile phone . This process is achieved with the help of communication through the existing cellular network structure. It is configured with the help of four units:

- Server database module
- Web content handler
- Trigger module
- Communication module

The server of the database holds the coverage of network and the location of tower are stored in the database server. Web content module is used for viewing the application content with the help of triggered module it can used the facility of free messaging to all users of mobile .This system is developed with the help of java programming language . In this system if any disturbance are accruing in the

nature. It first checks the area which is under disturbance with the help of GIS then it set the priority against that high, low, or medium. Then it fetch the content from the database and send to the person of that area which is effected with that for this first of that we have to store the mobile number of people according to the geographical location. So when the system is needed it fetches the data from the server and send sign to people .After that people have awareness about the messages this message is also set priority of landslide Hayward with the people can aware about the atmosphere or they can easily move from one location to other .In that way we can save the millions people life. [6]

Methodology

After reading some papers on Natural disaster Management first I would like to say it’s very interesting and important literature because it's totally related to our environment or earth I was not aware about all the thing that I have read about nature that how it works before reading these paper I thought that natural disaster is in the hand of nature we can't control them but it’s not like that I want to say that A warning system established which give notification to the people regarding the any if any disaster occur or provide the information like open area where they can go and save their own life because in the today world all cities are hustle bustle or full of crowded people don’t know where to go when that kind of disaster is occur . This warning system is made with the help of android or window based because in today world everyone has smart phones. With this system they provide an emergency number which is provide by governments of any country and give the information of facilities which is provided by the NGO and government.

References

1. Jose R. R. Viqueira, Pedro Alvarez, Jose Varela, Pedro J. Saco: “Architecture of a Natural Disasters Management Framework and its Application to Risk Assessment”.
2. Marius CIOCA, Lucian-Ionel CIOCA, Lucian Blag: “Decision Support Systems used in Disaster Management”, University of Sibiu Romania.

3. M. Sheik Dawood Sethu, J. Suganya Sethu: “A Review on Wireless Sensor Network Protocol for Disaster Management”, Institute of Technology Pulloor, India.

4. Naveed Ahmad, Naveed Riaz, Mureed Hussain: “Ad hoc wireless Sensor Network Architecture for Disaster Survivor Detection”.

5. Varsha S. Sonwane: “Disaster Management System on Mobile Phones Using Google Maps”.

6. Jayanta Kumar Ghosha, Devanjan Bhattacharyab, Piero Boccardoc and Narendra Kumar Samadhiyad: “A land slide hzard warning system”.