

# Secured Content Transmission and Remote controlling in MANET

R.Subadhra, S.Govindaraj

**Abstract** -- The Software entitled "Secured Ultimate VPN for Content Transmission Support in MANET" is a windows application which is implemented to replace the manual system effectively. It can eliminate the human errors, which are likely to creep in the kind of working with bulk quantity of data, and typical calculation has to be processed. This package designed for the particular need of the college placement cell is found to work out the operations effectively and efficiently. This system attempts to integrate all departments and functions onto a centralized database that can serve all those departments' particular needs for placement support.

The main theme of this proposed system is making machines to think automatically and to avoid the human power in order to take care of company's growth and keep growing management part. In order to implement this proposed system, a new technology is introduced called "ARTIGENCE" (ARTificial intelliGENCE). This technology is controlled by some device management and OBEX (OBject EXchange) supported mobile device such as W220i model of Sony Ericson. With the help of this OBEX supported wireless device, the Asynchronous transmission is coded in order to control the database from remote area through wireless connection. Usually a mobile device connected with PC through data cable in the server system with a gateway connection enabled like Airtel, Aircel, and Reliance, Idea etc., which usually comes in the form of SIM card.

The project consists of several modules such as Student personal and academic details, placed student details, campus interview details. In this proposed system, all modules are maintained in a centralized database and with the help of Artigence; the management can get the details then and there by posting mobile syntax via base station networks. Database design has been done in order to handle data as an integrated one.

**Index Terms** – Artiq Remote controlling, PDU converter

## 1. INTRODUCTION

The Project entitled "Secured Ultimate VPN for Content Transmission Support in MANET" has going to be design and develop by using **Microsoft Visual Studio Dot Net 2008** acting as front end tool and **MS SQL Server 2005** acting as back end tool.

Considering Artigence Control, the placement information is allowed to maintain in a centralized database. The Artigence control is embed into the software with the help of wireless device where all the request nodes from management side can respond through base station support. The working of the Artigence is designed in such a way that a timer control is activated where the port refresh every 1000 milliseconds and check the wireless device inbox whether any information reached or not. If any information takes place in the inbox, the information will get break and divide into two sections. First section will maintain the destination number i.e., who is requesting this mobile information and the second section will maintain the message, where it checks out whether the message is related to mobile syntax or not.

If the authenticated person and authenticated message is eligible to response from the server side, then the message will get ready to transmit from the Artigence side to the requested management side. It can eliminate the human errors, which are likely to creep in the kind of working which bulk quantity of data, and typical calculation has to be processed. This package designed for the particular need of the placement cell is found to work out the operations effectively and efficiently.

This system attempts to integrate all departments and functions across a college onto a centralized database that can serve all those department particular needs. Each of those departments typically has its own computer system optimized for the particular ways that the department does its work. But this system combines them all together into a single, integrated software program that runs off a single database so that the various departments can more easily share information and communicate with each other. Security is the main feature in the field of organization. Thus it prevents illegal users from viewing unauthorized information.

## Problem Definition

- High control overhead
- Limited battery and low bandwidth
- Fixed infrastructure since internet server is used.
- Anonymous
- No security
- Lack of scalability
- Complicated

## Project Objective

- Transfer Packets without Internet Connection both in Source side and Destination Side.
- Packets are going to communicate only through base stations support in which it transmits as Unicode transmission.
- High transmission baud rate 115200 is set to increase the transmission.
- Accessing information from any location without internet facility from source side and destination side.
- Multicast services are provided.
- Information is carried through base stations networks.
- Packet by Packet each class stream is send to Destination.
- Send one packet in each small round.
- High priority is initialized by providing Unicode transmission in packet, so that the packets are delivered to the content in the form of FLASH message.
- Reducing burst generation at the output port from the same traffic stream.
- Maintaining fair bandwidth allocation for competing network streams.
- Minimizing delay.
- Giving opportunity to other classes to access the bandwidth.
- To reduce packet inter transmission time from same stream.

## 2. RELATED WORKS

An extensive review of literature relevant to the implementation of Virtual Private Network protocols, particularly IPSec, on embedded systems was conducted. Papers relevant to the AES and SHA-1

algorithms, relevant multithreaded and embedded design issues and past work on network processors were also considered for inclusion in this review. Extensive literature exists on the theoretical aspects of the algorithms and techniques used for design and implementation of the project. Very little literature exists, however, on practical and theoretical aspects of designing and developing applications for network processors.

## 3. SYSTEM ANALYSIS

The basic aim of the system analysis is to get the clear understanding of the needs of the clients and the users. What exactly is the need from the software and what are the constraints on the solution. Analysis leads to the actual specification

### Existing System

The existing system is manual, which is quite tedious and time consuming. Also it is more error-prone. In existing system, details about the "Placement" are not automated.

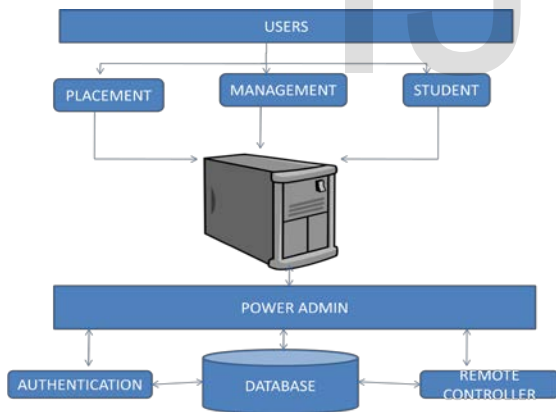
### Drawbacks of the existing system

- It is not computerized and hence not systematic.
- Lack of database security.
- Same data are stored in more than one location.
- Access speed is less for searching and modifying data.
- Integration problem across the departments.

### Proposed System

Here the new concept of power admin comes in. The main goal of the power admin is to make a great control over the existing process. The power admin mainly does two processes. They are

AUTHENTICATION and ARTIQ REMOTE CONTROLLING. High priority is initialized by providing Unicode transmission in packet, so that the packets are delivered to the content in the form of FLASH message. Here we include an option for power admin to retrieve the document through SMTP. It's the power administrator's choice to block a request or to send the required data requested by the client. If the placement cell wants to update about the interview details to the principal or to the students through the mail, then by using syntax, he can easily send it using his ordinary mobile phone without internet. For each roles the work of power admin is to provide them the necessitate authentication. In the previous system, any anonymous person who types the code will retrieve the details. So it completely lags in security. The priority term is maintained to use this system effectively. High level control is given. It Reduces burst generation at the output port from the same traffic stream. It maintains a fair bandwidth allocation for competing network streams and minimizing delay.



**Advantages of the proposed system**

- Increases the Management satisfaction.
- Data tampering is reduced

- Provides security that protect against outsider crime.
- Reduces cost of operations
- Brings down number of man power processing
- Once the management composes any one of the above **MOBILE SYNTAX** and message to the server means. The server first check whether the requested number is management number or not and once if the authentication process success, the particular details is composed to the management number with the help of PDU converter.

**Comparison**

| Proposed system  | Existing system   |
|--|---|
| No internet connection is used.  | Internet connection is used.  |
| It's not like Round Robin and First In First Out.  | It uses Round Robin and First In First Out.                                       |
| It uses Proxy Based Servers.   | It uses simple servers.   |
| 90% of the server is used and the rest Proxy based servers are used.                                   | Entire server is utilized.  |
| The bandwidth assigned in proposed system is 115200 baud rate, thus guarantee the transfer of message. | Here the bandwidth is only 9600 baud rate. Transfer of message is not guaranteed. |

**4. PARAMETERS**

The Proposed System being developed as a replacement for the existing system is a graphical user interface with the good interactions with the database. It is primarily an application oriented which could be enabled in the future.

To overcome the placement drawbacks, the entire system is embedded with Artigence in order to boost the management side by automatically sensing the management query and response to the query. The Query for the management is as follows *rna* (Retrieve Student Academic details), *rnp* (Retrieve Student personal Details), *pid* (Retrieve Placement details), *Placed* (Retrieve Placed student details), *dbblock* (To lock the database), *dbrelease* (To release the database)

To develop user friendly software that meets the user needs any time. Information can be created and altered by power admin. In the system the customer can access the product catalogs of the organization. Here the Proposed system is a complete automation of the "Placement Details" by using Arti Join-Q System.

### 5. SYSTEM DESIGN

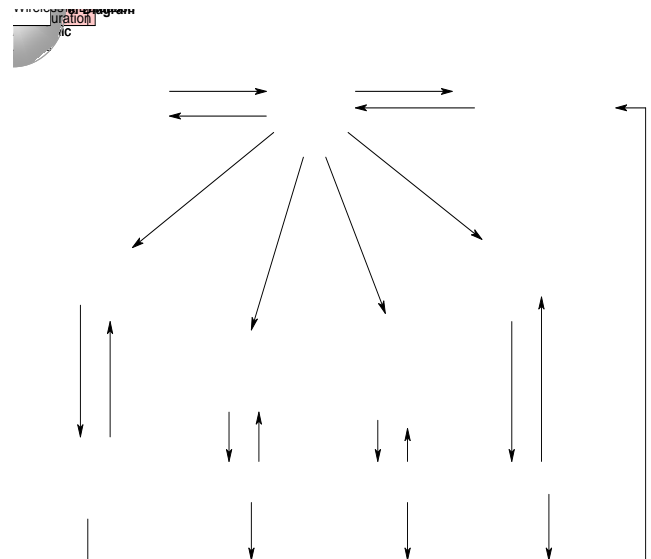
System design is the solution, a how to approach to the creation of a new system. It provides the understanding and the procedural details necessary for implementing the system recommended in a feasibility study. Emphasis is translating the performance requirements into design specifications. Design goes through logical and the physical Systems design is the process or art of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. The objective of the proposed system is the driving forces behind the design process based on the input and the output requirements, the system is designed.

#### Context Analysis Diagram

The Context diagram represents the entire system under investigation. The context diagram clearly shows the interfaces between the system under investigation and the external entities with which it communicates. Therefore, whilst it often conceptually trivial, a context diagram serves to focus attention on the system boundary and can help in clarifying the precise scope of the analysis.



#### Zero Level Diagram



### 6. PROPOSED ALGORITHM(ARTI JOIN Q)

**Step 1:** Create a two 2-dimensional array and named it as External proxy  $E_p(i, j)$  and internal proxy  $I_p(i, j)$ , where 'i' represents Queue Number and 'j' represents requested data which includes syntax, destination mobile number.

**Step 2:** Create a Arti-JoinQ Timer Control 'T' in  $I_p(i, j)$  with and interval set to 0.5 seconds.

**Step 3:** Initialize predefined syntax  $P_s$

**Step 4:** For every 'T' hits 0.5 second

Read  $E_p(i, j)$

$I_p(i, j) \leftarrow I_p(i, j) + E_p(i, j)$

$E_p(i, j) = 0$  (Reset External proxy counter to zero)

**Step 5:** For each  $\sum^n I_p(i, j)$

Initialize S, DM

Where 'S' represents 'Requested syntax' and

DM represents 'Requested Destination Mobile Number'

$S \leftarrow \text{Filtersyntax}(I_p(i, j))$

$DM \leftarrow \text{FilterDestinatormobile}(I_p(i, j))$

If  $S = \sum^n I_p(i, j)$  then

RD  $\leftarrow$  Call function ( $P_s$ )

Initialize Z =0, K=0, PQ[]

For z=0 to  $\sum^n I_p(i, j)$

If  $I_p(i, j) = S$  then

PQ [k]: k=k+1

End if

Next z

End if

**Step 6:** Divide RD into packets

Initialize M ;

for m=0 to k-1

send packets (PQ[M], RD)

replace  $I_p(m, j) = 0$

Next m

Delete row  $\sum^n (I_p(m, j))$  where  $I_p(m, j) \in 0$

**Step 7 :** repeat Step 3.

### Module design

1. Student Personal details
2. Student Academic details
3. Campus Interview Details

4. Placed student details

5. Wireless configuration

6. Arti Join-Q System

### Login Module

It is used to check the user authorization.

### Source Module

Used to maintain and perform the client input data and also the source data's are packet wise forwarded to the server in one by one. Each round only one packet is send to scheduler. Give the chance to each class frames equally. (Including Lower Priority classes)

### Scheduler Module

Used to performing the following 3 operations.

- Receiving the message.
- Scheduling the message.
- Forwarding the message.

Here Maintain one queue .That Queue based all the above 3 process are performed called Arti Join-Q (Artificial Queuing System)

### Power Admin

- Used to block the database
- Used to release the database
- Used to provide authentication to each roles.

## 7. TEST RESULTS

All the test cases mentioned are passed successfully. No defects encountered.

| MODUES                     | Input  | Expected Result                    | Actual Result  |
|----------------------------|--|------------------------------------|--|
| Login Form                 | User name and Password input   | Login Successful                   | Login error.<br>Login Successful.  |
| Student Personal Details.  | Student personal Details.  | New Student Record Added.          | Invalid email-ID.<br>Invalid Phone number.<br>New Student Record added.            |
| Student Academic Details.  | Student Academic Details.  | New Student Academic Record Added. | String cannot be converted to Integer.<br>New Student Academic Record Added.       |
| Checking ADHOC Connection. | <ul style="list-style-type: none"> <li>➤ Artigence port.</li> <li>➤ Baud Rate.</li> <li>➤ Timeout (ms).</li> </ul> | Successfully connected to phone.   | Port Problem.<br>Connection doesn't exist.<br>Successfully connected to the phone. |
| Connect Server             | Button Click   | Server Connected.                  | Server connection error.<br>Server connected.                                      |
| Campus Interview Details.  | Campus interview details.  | New Record Added.                  | Multistep OLEDB operation.<br>New Record Added.                                    |
| Placed student details.    | Placed student details.  | New Record Added.                  | Multistep OLEDB operation.<br>New Record Added.                                    |
| Arti-Join Q system         | Mobile Syntax.   | Syntax Successful                  | Syntax error<br>Syntax Successful  |
| Power Admin                | authentication   | Provide priority and security      | Authentication succeeded.  |

## 8. CONCLUSION

In this research work, we analyzed the communication related to Mobile Ad hoc network. In that MANET (Mobile Ad hoc Network) is the collection of mobile nodes. This research work represents the Artigence technique. Arti Join-Q means artificial intelligence technique. It uses the technique called Arti Join-Q. The requests are stored in the queue, same requests are handled simultaneously in order to reduce the waiting time and increase the response time. The Proposed method is combined with the Arti Join-Q which is used in the application placement cell. Arti Join-Q is used to improve the efficiency of the placement cell.

In future Dual Arti Join-Q system can be designed in order to avoid the disadvantage of Arti Join-Q based placement cell related to time. So that the efficiency of Dual Arti-Q system can be improved when compared with existing Arti Join-Q based MANET in the application of placement system.

The proposed system relationships are smoothed with the organization through placement customization. Administrator can manage the system more efficiently.

The project is full-fledged and user-friendly. The system has greatly reduced the clerical overhead and drastically reduced the time taken in the products. The system satisfies all requirements needed by the user. I conclude the software as best to my knowledge.

## 9. BIBLIOGRAPHY

### Reference papers:

1. D. Waitzman, c. Partridge and s. Deering, "distance vector multicast routing protocol," rfc 1075, 1988.
2. J. Moy, "multicast extensions to ospf," rc 1584, 1994.
3. M. Ghasemi, m. Bag-mohammadi, "classification of multicast routing protocols for mobile ad hoc networks," in proceedings of 3rd international conference

- on ict convergence (ictc'12), jeju island, south korea, pp. 789-794,2012.
4. S.j. lee, m. Gerla and c.c. chiang, "on demand multicast routing protocol," in proceedings of wireless communications and networking conference (wcnc '99), new orleans, usa, pp. 1298-1302, 1999.
  5. M. Lee, y. K. Kim, "patchodmrp: an ad-hoc multicast routing protocol," in proceedings of 15th international conference on information networking (icoin'01), washington dc, usa, pp. 537-543, 2001.
  6. S. Cai, x. Yang, "the performance of poolodmrp protocol," in the 6th international conference on management of multimedia and mobile networks and services (mmns'03), belfast, uk, pp. 90-101, 2003.
  7. B. So, h. Jeon, j. Lee, "peodmrp: performance enhanced on-demand multicast routing protocol," in the 8th joint conference on communications & informations (jcci'04), moojoo resort, korea, 2004.
  8. y. Zhao, l. Xu and m. Shi, "on-demand multicast routing protocol with multipoint relay (odmrp-mpr) in mobile ad hoc network," in the 9th

international conference on communication technology (icct'03), beijing, china, pp.1295-1301, 2003.

9. T.s. rappaport, wireless communications: principles and practice, prentice hall, upper saddle river, nj, 1995.

#### Text books

1. Alex homer, "**professional vb.net 1.1**", 2004 edition, wrox publications.
2. Steven holzner, "**visual basic.net black book**", 2003 edition, dreamtech publications.
3. Roger s pressman, "**software engineering**", 2000 edition, dreamtech publications.
4. Karli watson, richard anderson , "**professional asp.net 1.1**" , 2004 edition, wrox publications.
5. Pooja bembey and kuljit kaur with niit, "**microsoft visual basic.net professional projects**",2002 edition, prentice hall of india private limited.

#### Websites:

1. [www.msdn.microsoft.com](http://www.msdn.microsoft.com)
2. [www.vbcity.com](http://www.vbcity.com)
3. [www.vbdotnetheaven.com](http://www.vbdotnetheaven.com)
4. [www.codeguru.com](http://www.codeguru.com)

*R.Subadhra and S.Govindaraj is currently pursuing M.E degree in Hindusthan College of Engineering and Technology*