Title: IMPLEMENTATION OF VOICE OVER INTERNET PROTOCOL (VoIP)
OVER WIRELESS LOCAL AREA NETWORK (WLAN)

By

SHAIFUL AFZAN BIN ABDOL MAJID

(2001189162)

A project paper submitted to

FACULTY OF INFORMATION TECHNOLOGY AND QUANTITATIVE
SCIENCES

MARA UNIVERSITY OF TECHNOLOGY

In partial fulfillment of requirement for the

BACHELOR OF SCIENCE (Hons) IN DATA COMMUNICATION AND
NETWORKING

Major Area :   Wireless Communication

Approved by the Examining Committee :

... ...⟁... ... ...
Associate Professor Dr Saadiah Yahya   Project Supervisor

... ...
Mr. Hj. Jamil bin Abu Sari   Examiner

MARA UNIVERSITY OF TECHNOLOGY
SHAH ALAM, SELANGOR

OCTOBER 2003

ACKNOWLEDGEMENT

In the Name of Allah

Most Gracious, Most Merciful

Praise to Allah SWT for giving me the opportunity to complete this project. I would like to express my sincere gratitude to every one whom involved directly or indirectly in this research project.

Firstly, I wish to thank indebted to my supervisor, Profesor Madya Dr. Saadiah Yahya for her never ending support and guidance. She is such a patient, tolerance person that never gives up and has faith on me to complete this project.

A special dedication to my senior Mr. Baharum Azhar bin Abdullah for his precious guidance and support during completing this project. Without him, I certainly would not be able to solve the problem in finishing my thesis.

A great thank to all Computer Technology and Networking (CTN) lecturers such as Mr. Hj. Jamil bin Abu sari which also as my examiner, Mr. Jamaludin bin Yusof and others for their cooperation and opinions regarding my project.

Also, not to be forgotten to my fellow friends and colleagues who gives their ideas and support in term of energy, money and time to realize this research project.

Last but not least, I want to thank my family for the love, encouragement and tolerance during the months I spent preparing this project.

ABSTRACT

In this day and age, Voice over Internet Protocol (VoIP) is seemed to be promising in data and voice communication. One of features provided by this technology is mobility that leads in the making of *VoIP over WLAN*. The technology, support by wireless connection gives convenience to mobile people especially who playing with mobile laptops to communicate at different area through voice. Even though, mobile phone is most preferable, VoIP WLAN has its own advantages to transport data and voice at the same time and timely manner. This main purpose of this project is to show the successfulness of VoIP over wireless communication particularly on WLAN using open source VoIP system. Besides that, experiments were done to prove the VoIP over WLAN as alternative way to communicate data and voice at different area in the FTMSK. A simulation of small WLAN environment was created to test the VoIP system functionality through the chosen method. It was found that the VoIP system support voice and data communication on the WLAN environment. However then, there were still some problems that cannot be catered due to wireless barriers and open source inter-operability. It is recommended to test the VoIP system in the larger wireless connection and to implement the QoS features on both VoIP and wireless system.

Key words: VoIP, WLAN, open source, mobility, voice, data communication and convergence.

TABLE OF CONTENTS

TITLE	PAGE

Chapter 1: Introduction

Chapter 2: Literature Review

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE PROBLEM

Since the early nineties, the telecommunication landscape has changed considerably. From wired to wireless the communication goes extremely flexible. Today, people tend to communicate in the simplest way for the sake of their convenience.

One mega trend in the development is the convergence of voice and IP data networks. This means that voice will be carried in the future not only in the conventional networks but also in alternative ways. One of such type of convergence is Voice over Internet Protocol (VoIP), which is now dominating the communication world.

Another trend that is progressing and growing rampantly is the move from wired to seamless wireless communication. Our societies today are becoming increasingly mobile and the demand for wireless communication is increasing rapidly. By implementing the variety of communication features over the wireless infrastructure, the society will benefit the ease for communicating without being restricted to wired environment.

Where these trends lead us? What are the conveniences that these convergences can contribute to the human telecommunication? It is all about how these trends merged, thus bringing simplicity and flexibility in the world of communication. Nowadays, one of the great benefit as the result of this convergence is VoIP over Wireless Area Network (WLAN).