

Final Year Project Report
Project Name: Sim Free Communication



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Dedication

In order to achieve goals and aim for them unswervingly, it takes an awful lot of determination and effort as well as guidance of elders especially those who give their valuable time to us. We dedicate our humble effort to our loving

Parents

Who spent their lives to made us what we are today, their love, inspiration and prayers made us accomplish this work and granted us such success and honor Along with all respected

Teachers

For their continuous support and hard work to bring the best out of us.

Final Approval

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Acknowledgment

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Project Title **Sim Free communication**
Objective **Communication System**

Supervised by **Dr. Tahir Mushtaq**
Starting Date **19/03/2017**

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Tools Used **Android Studio, freepbx**
Operating System **Android, Linux**

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Abstract

Pakistan faced serious challenges from large scale natural disasters. In October, 2005 earthquake occurred in Kashmir. It was centered near the city of Muzaffarabad, and also affected Kyber Pakhtunkhwa province. In 2010 floods due to heavy monsoon affected about 20 million people in different areas of Pakistan. Natural disaster results into communication failure

So, licensed band communication cannot help in these types of situation. A free licensed band communication can help us during disasters. Offline communications systems during a natural disaster can be dangerous for affected. One of the quick and huge effects of flooding and cataclysmic events is the sudden and wide-scale breakdown of communications infrastructure. When local communication networks fails, the effect can be broadly felt and can wipe out access to standard versatile or landline telecommunications, notwithstanding Internet and even satellite-based crisis specialized devices. And one more application of this system can be, that there are different companies and organizations that user their own private branch exchange systems. This system can replace that old private branch exchanges.

REVISION CHART

Version	Primary Author(s)	Description of Version	Date Completed
<i>Draft</i>	All members	Information and requirement gathering	05/10/17
<i>Preliminary</i>	Zohaib Muneeb	Functional and non-functional requirements, project overview, system attributes, assumptions	20/10/17
<i>Final</i>	All members	Prototyping, design specifications, UML diagrams, Use cases, database design	03/11/17
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<i>Revision 3</i>	M.Muneeb Zohaib	Class diagram, test cases, user interface	05/9/18
<i>Revision 4</i>	Zohaib	Whole document revised	19/10/18

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Definitions and Acronyms

Table 1: table of acronyms and definitions

Acronym	Definition
SIM	Subscriber Identity Module
PBX	Private branch exchange
Voip	Voice Over ip
SIP	Session Initiation Protocol

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1. INTRODUCTION

1.1 Motivations

Pakistan faced serious challenges from large scale natural disasters. In October, 2005 earthquake occurred in Kashmir. It was centered near the city of Muzaffarabad, and also affected Kyber Pakhtunkhwa province. In 2010 floods due to heavy monsoon affected about 20 million people in different areas of Pakistan. Natural disaster results into communication failure, rescue worker can't be able to communicate with others. So licensed band communication cannot help in these types of situation. A free licensed band communication can help us during disasters. With the help of SIM free communication system we can minimize communication gaps.

1.2 Project Overview

Our project called SIM free communication using Raspberry Pi. During natural disaster communication problems occur. To overcome this problem we are building this system which can work in all situations (independent of telecommunication companies). Another application can be private exchange for private companies or organizations.

Customer can be army, rescue teams and government and also private sectors that want to implement this system in their premises for disaster management or as private phone exchange.

Our goal is to provide a SIM free communication system. So, we can overcome communication failure in disasters.

System functions are, raspberry pi devices which will act as base station through this station android phones can communicate with each other using android application in the form, voice calls.

1.3 Problem Statement

Pakistan confronted genuine difficulties from vast scale catastrophic events. In October, 2005 quake happened in Kashmir. It was focused close to the city of Muzaffarabad, and furthermore influenced Khyber Pakhtunkhwa area. In 2010 surges because of overwhelming storm influenced around 20 million individuals in various regions of Pakistan. Catastrophic event results into correspondence disappointment, safeguard laborer can't be ready to speak with others. So licensed band communication cannot help in these types of situation. A free licensed band communication can help us during disasters. With the assistance of SIM free framework we can overcome this issue.

Our project is solution to these problems. This system can create communication between affected people and rescue team members.

1.4 Objectives

Our objective is to provide SIM free communication system to the army, police, rescue teams so for disaster mitigation so they can save lives of the affectees. And to provide this system as private phone exchange that can replace typical telephone exchange.