CHAPTER 1

INTRODUCTION

In this section, we'll learn about the background of the issue that needs to be resolved, how the issue was defined, the reasons why this project is necessary, its goals, and advantages. We'll also learn about the research methodology that should be taken into consideration.

1.1 Background

A wireless network of wearable computer devices is called a Wireless Body Area Network (WBAN). In recent years, WBAN has been regarded as one of the cutting-edge technologies in the field of health [1]. The WBAN application's remote health monitoring within the human body is its key feature. Implanted sensors in the body or worn sensors on the body can monitor physiological conditions, such as heart rate, pulse rate, body temperature, and blood pressure. WBAN is proposed based on the need for remote medical therapy.

E-health is one of the internet-connected programs that requires registration before users can access hospitals, doctors, insurance, etc. E-health enables patients to consult with a physician or nurse without waiting in a hospital line. E-health can also keep track of whether a patient's condition is good or bad.

The rate control strategy for implantable WBANs should have the following features due to the special nature of these devices: [2]. To gather sensed data from the sensor nodes, two sink nodes are positioned at the front and back of the human body, respectively. Direct communication or a middle forwarder node are both options for sending data from each sensor to the sink.

However, when sending data to the sink, there will definitely be various problems that arise such as the delay of the packet data sent from 1 node, and some throughput generated when sending packets from 1 node. However, not

only throughput is obtained for the output, but there is how much energy consumption is generated from 1 node in sending a data packet and the number of packets received from 1 node. Therefore, the purpose of this thesis is to determine how much throughput, energy consumption is generated, and how many packets are received from 1 node.

1.2 Problem

The problem statement for this thesis is to implement healthcare monitoring in light of the context. Even if WBANs are already in use as a technology. Due to the high energy constraint and application delivery needs of implanted WBANs, the rate management approach should focus on preventing congestion rather than reducing it after it occurs.

1.3 Objective

The objective of this thesis are as follows :

1. Describe Energy Harvested Based Routing Protocol.
2. Calculate throughput, packet receive and energy consumed.

1.4 Research Methodology

The stages of research methodology carried out on this undergraduate thesis are as follows :

1. Researching Throughput in every nodes.
2. Simulate the average energy consumed using Castalia and Omnet++.