CHAPTER I
INTRODUCTION

1.1 Background Problem

The development of telecommunications networks today is progressing very fast. Various kinds of telecommunications technology facilities continue to be developed so that *users* can communicate practically, wherever *the user's location* is. Communication can be established, both in small areas such as office buildings, communication between buildings, to communication within one city.[1]

To build communication in areas that are not so broad, a Local Area Network (LAN) network can be used. LANs are used to transfer data between PCs, workstations, mainframes, and data peripherals. One way to improve end-user performance is to divide a single large LAN segment into smaller LAN segments, which are called “microsegments”. Therefore, we can use the device switches in order to divide a single segment of a wide LAN into multiple segments. One of the LAN technologies implemented with switches is Ethernet.

The widespread use of Ethernet Switches in real-time communication systems at the LPP-BANDUNG company has resulted in demands for security and optimal bandwidth usage from sending frames on the network, especially with data communication activities between work sub-divisions. In other words, in unitsof time, the switch must be able to process a number of packets transmitted by adjacent entities and be able to provide bandwidth capacity large enough to support traffic addresses to reach their destination. In this Final Project, an analysis of Calculating will be carried out Through put, delay and packet loss of a packet sent in an Ethernet Switch network.[2]

1.2 Problem Formulation

From the background above, several problems can be formulated, namely:

1. How to calculate the Throughput speed of delay packet loss network?
2. Analyze Performance switch network connection on a local area network (LAN)?

1.3 Purpose of Writing

1. Calculate to analyze the throughput speed of packets sent
2. Analyze packet delay calculations sent on Ethernet *Switch LAN network connections*

1.4 Problem Limitation

To facilitate the discussion in this paper, the limitations of the problem are made as follows:

1. Discussing LAN networks in general at LPP-BANDUNG.
2. Discusses *Ethernet Switch networks* in general at LPP-BANDUNG.
3. The type of LAN network used is a network type using *a star topology* at LPP-BANDUNG

1.5 Writing Methodology

The writing methodology used by the author in writing this Final Project is:

1. Literature Study, namely in the form of literature studies and studies of supporting books and journals, both in hardcopy and softcopy form.
2. Analysis Study, namely in the form of making calculations using the performance parameters discussed.

1.6 Writing Systematics

The writing of this Final Project is presented with the following writing systematics:

CHAPTER I INTRODUCTION

This chapter is an introduction which contains the background of the problem, the purpose of writing, the problem definition, the writing method, and the writing systematics of this Final Project.

CHAPTER II: LITERATURE REVIEW

This chapter discusses the working principles, architecture, LAN standards, IP addresses, ICMP, Wireshark applications, topologies, *Media Access Control* (MAC) of LAN networks.

CHAPTER III: *RESEARCH METHODOLOGY*

This chapter consists of four sub-chapters, namely time and place of research, materials and tools, research variables, and research methods

CHAPTER IV: RESULTS AND OBSERVATION

This chapter analyzes Analyze Calculations Throughput, delay and packets loss of packet sent in the Ethernet Switch network on the local network area network (LAN)

CHAPTER V: CONCLUSION AND SUGGESTION

This chapter contains conclusions from the analysis of this Final Project and suggestions from the author LISTREFERENCES