

ABSTRACT

Indonesia is an archipelagic country consisting of thousands of islands. To connect the various islands, various communication networks have been built, both via sky routes with palapa rings using satellites and land and sea routes with fiber optic cable networks under the sea, making the development of data communication networks for banking, especially Automated Teller Machines (ATMs) available. several alternative options not only use Very Small Aperture Terminal (VSAT). The problems that exist when using a VSAT communication network are high service costs and large latency. So studies or research are needed to find better alternative data communication networks.

For this research, GSM and VSAT communication networks were simulated using Matlab Simulink. It is necessary to compile the process blocks listed in the schematic blocks in order for this implementation to gather comparison data of the communication network using VSAT and GSM. The comparison metrics used are Bit Error Rate (BER), Bandwidth, Latency, and Pathloss.

The advantages of this study from the previous one are comparing the performance of ATM services using VSAT networks and GSM networks. The results of this study used Matlab simulink simulation. The comparison of VSAT networks obtained has BER from $2,798 \times 10^{-5}$ to $6,999 \times 10^{-6}$, Bandwidth 200 KHz to 10 MHz, Latency 113-334 ms, 128Kbps-10Mbps and PathLoss 180-205dB. While the GSM network has BER $1,026 \times 10^{-1}$ to $6,902 \times 10^{-6}$, Bandwidth 9.6 KHz to 100MHz, Latency 129 to 130 ms, and Path Loss 90 dB-120dB.

Keywords: *Quality Of Service, VSAT, GSM, Simulation, Simulink.*