ABSTRACT

Mobile Satellite Service (MSS) is a mobile communication system that used a satellite as a repeater. Advantage of MSS copared to terrestrial networks which used a BTS (Base Transceiver Networks) is satellite global coverage that let user use its service whenever and wherever without blank spot or the condition when there is no BTS coverage at all. In this project will be discussed MSS that works on L-band frequency.

Performance parameter will be discussed are how the influence of variant user velocity and variant elevation angle at variant Rician factor to the need of SNR to reach BER target 10⁻³.

From the result of analyze, the higher user velocity and the smaller elevation angle, the Doppler Shift is getting higher. The highest Doppler shift is happened at 120 Km/h with elevation angle at 60 degrees about 86.6111 Hz. For 0 Km/h or elevation angle 90 degrees, there is no Doppler shift. For the result of influence of Rice factor, at rice factor about K=0 the system can't reach BER target 10^{-3} . It caused by at K=0 there is no Line of Sight (LOS) signal components at all. The lowest SNR needed is happened at K=10 about 4 dB. For influence of Doppler Shift at variant Rician factor, the result are at user velocity is 0 Km/h and 3 Km/h the change of the needed of SNR is not significant in each Rician factor. But for 120 Km/h and 70 Km/h the change of SNR is significant at Rice factor K=3 and K=7. The change is about 10 dB.

Keywords : MSS, L-Band, satellite