Unjuk kerja slotted Aloha-CDMA pada Satelit Leo dengan efek capture pada kanal ber-fading

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Abstrak

Pada sistem komunikasi bergerak, fading menyebabkan penurunan unjuk kerja. Unjuk kerja sistem dapat diperbaiki dengan menggunakan efek capture. Efek capture adalah dapat diterimanya suatu sinyal tanpa kesalahan pada receiver pada saat terdapat banyak sinyal yang dikirim secara simultan pada kanal. Dalam tesis ini dianalisa unjuk kerja metode akses slotted ALOHA-CDMA pada LEO dengan efek capture pada kanal ber-fading yang terdistribusi Rician. Unjuk kerja yang dianalisa meliputi probabilitas paket sukses, throughput dan delay akses kanal.

Dari hasil perhitungan terlihat bahwa makin besar w (track makin uniform), probabilitas paket sukses slotted ALOHA-CDMA makin tinggi, throughput semakin besar dan delay kanal slotted ALOHA-CDMA makin kecil. Makin besar faktor Rician K dan makin banyak jumlah kode Nc probabilitas paket sukses dan throughput kanal slotted ALOHA-CDMA makin besar. Makin kecil rasio capture probabilitas paket sukses dan throughput kanal slotted ALOHA CDMA makin besar. Makin besar faktor Rician dan makin banyak kode, delay kanal semakin kecil. Rasio capture makin besar, delay kanal semakin besar. Dengan diikutsertakan efek capture, throughput kanal slotted ALOHA CDMA lebih tinggi dan delay lebih rendah dibandingkan dengan tidak diikutsertakan efek capture.
<hr>In mobile communication, fading can lower performances of the system. We can improve the performances by using capture effect. Capture effect is a condition that a packet can capture the receiver even though the packet arriving at the receiver overlaps in time with other packet. This paper presents an analysis of performances of access method slotted ALOHA-CDMA in LEO satellite system which include the influence of both fading in Rider'? and capture effect. The performances of system are characterized by probability of packet success, channel throughput and delay.

It is shown from the results that whenever traffic non uniformity decreases, the probability of packet success and throughput increase and delay slotted ALOHACDMA decreases. The increasing of Rician parameter and number of code in the network cause the increasing in probability of packet success and throughput and the decreases in delay. If capture ratio decreases, probability of packet success and throughput of slotted ALOHA-CDMA increases. Whenever capture ratio increases slotted ALOHA-CDMA channel delay increases.