

ABSTRACT

Subscribers growth of cellular CDMA2000 system-based keep growing follows price drop. This things introduce users to increase traffic occupancy in the network. The thesis is an analysis of user capacity calculation in CDMA2000 system. That knowledge become important for operator in order to deeply investigate their network capabilities in term of capacity.

The study is made through capacity measurement in the field, capacity theory consideration, walsh code utilization monitoring, peak data transmission consideration and vocoder applied in the CDMA2000 system. Firstly, the analysis is done for single cell which is not interfered by other system and there is no mobility. Then analysis applied in multi cell environment with mobility. Finally, how to calculate number of subscriber of a city with predefined traffic intensity per user.

The result of CDMA2000 system capacity calculation with single carrier is 36 users. However the user capacity of three carriers are multiplication of three times single carrier capacity after deducted by hand off factor. Subscriber capacity in a city that supported by 115 BTS, configuration S3/3/3, coverage area 326.36 km², GOS 2%, traffic intensity per user 33 mErl and handoff factor results 1,091,348 subscribers.

Key Words: CDMA2000 1X, Carrier Frequency, Capacity