

## ABSTRACT

The development of telecommunication technology is fast, especially wireless mobility technology, from first generation until third generation technology. Rapid development sometimes make difficulties in using present technology, this condition makes telecommunication provider to think using the newest technology erases present technology. This change occurs in CDMA 2000 1X EV-DO system and WiMax IEEE 802.16e system that will be realized by PT. Telkom Bandung with use present BS (Base Station) from CDMA 2000 1X.

Both have been used and developed by PT Telkom. Those would provide the entire inhabitant with high speed wireless data transmission services. In order to optimalize these technology, case study performed.

This final project discusses WiMAX IEEE 802.16e and CDMA 2000 1X EV-DO system. It uses coverage (link budget and traffic), quality and capacity as primary parameters. 7 cells (urban) and 2 cells (sub urban) of CDMA 2000 1X EV-DO retrieved from the analysis of coverage by link budget method, while 20 cells (urban) and 13 cells (sub urban) retrieved from WiMAX IEEE 802.16e with the same analysis method. In other hands coverage analysis by traffic method gives 7 cells (urban) and 2 cells (sub urban) from CDMA 2000 1X EV-DO while 2 cells (urban) and 4 cells(sub urban) retrieved from WiMAX IEEE 802.16e. Quality analysis with the same BER ( $10^{-5}$ ) at reverse link gives Eb/No at 10 dB of value of CDMA 200 1X EV-DO while WiMAX IEEE 802.16e gives values of 13,4 dB, 15,2 dB and 16,3 dB. In forward link, using same modulation (QPSK) gives values of 12,5 dB and 14,5 dB. In per cell maximum capacity measurement CDMA 2000 1X EV-DO gives value of 1,868 Mbps/cell (forward link) while WiMAX IEEE 802.16e gives value of 9,18 Mbps/cell (forward link).