ABSTRACT

Nowadays, cellular technology and wireless communication is growing rapidly. Telecommunication technology has been developed not only for voice services, but also for data services or even image**.** Therefore, a new technology was developed, *CDMA 2000-1X* and *CDMA 2000-1X EV-DO*. CDMA 2000 is a platform of cellular technology which an expansion from standard platform CDMA IS-95 with spread spectrum which plays on CDMA technology for fill up multimedia application services. *Handover* is one of cellular communication characteristics and become an important aspect for keeping the continuity of telecommunication services when the subscriber moving from one place to other places. It needs a dependable *handover* mechanism to avoid dropping in cellular communication system. One of *handover* type is *intersystem handover.*

In this Final Project modeled user moves from cell of *CDMA 2000-1X* to cell of *CDMA 2000-1X EV-DO* with speed, movement angle, and mileage which has determined before. When user moves away cell of *CDMA 2000-1X*, received power level will decrease. When user approaches cell of *CDMA 2000-1X EV-DO*, user will receive 2 RF signal and that's when *handover* process happens. After *handover* process happened and user enters cell of *CDMA 2000-1X EV-DO*, starts from that condition user will served by system *CDMA 2000-1X EV-DO*.

In this Final Project got an optimum threshold, -91 dBm for *CDMA 2000-1X* and -100 dBm for *CDMA 2000-1X EV-DO* because it has a relative small time to trigger of 0.092 seconds and smalest blocking data rate of 58.90%. The increase of speed, it caused a smaller on time to trigger, a higher on blocking data rate and probability of dropping. On 110 km/hour speed, smallest time to trigger of 0.042 seconds, highest blocking data rate of 81.32%, probability of dropping of 0.17. When user moves away from center of cell, makes a higher on blocking data rate and probability of dropping. Data size didn't affect to time to trigger. Thedata size makes a higher on blocking data rate and probability of dropping.

Keyword : *CDMA 2000-1x, CDMA 2000-1X EV-DO, instersystem handover*