

ABSTRACT

Today, wireless and mobile communications technology is developed very rapidly. Various telecommunications technology has been developed not only for voice, but also for the image (and video) and data with a high mobility rate. Human need for communication demands the technology to develop communication systems that are flexible, can move freely and high technology, therefore, a new technology was developed; HSDPA and WiMAX 802.16e. High Speed Downlink Packet Access (HSDPA) is a technology in mobile telecommunication systems issued by the 3GPP Release 5 and is a 3.5-generation technology (3.5 G). HSDPA has a data packet-based service. WiMAX or Worldwide Interoperability for Microwave Access is a broadband wireless access technology (BWA) which has a high-speed access to a broad range. WiMAX 802.16e is a development from the previous version that supports user mobility or displacement.

User's mobility demands service continuity in the telecommunication network to stay maintained, and therefore needed a reliable handover mechanism. Handover is an important aspect in cellular radio systems to ensure the current relations will continue to exist, even if the user moves the position, so there is no dropping in the system. Handover does not only happen on the same system or technology, but also possibly occurred on different systems known as intersystem handover.

In this thesis, simulated intersystem handover mechanism between HSDPA and WiMAX 802.16e is based on user movement and analyzed the BER, utility and dropping probability. We can conclude from the simulation result, when the threshold combination is set to small it will generate small dropping probability, small BER, and large link utilization..

Keyword : WiMax, HSDPA, Intersystem Handover