

## ABSTRACT

Worldwide Interoperability for Microwave Access (WiMAX) and Third Generation (3G) technology could be used as a technology to provide Broadband Wireless Access (BWA) service. WiMAX has high data rate but not support mobility fully, 3G support mobility but in middle data rate. Based into this, there are some idea about how to combine two of them, so the weakness of both system can be eliminated. There are some problem to realize this idea, roaming and handover factor. Today, Mobile IP (MIP) technology capable to realize this idea. MIP allow Mobile Node (MN) to change their IP address every time but the application will not restart or stopped after that.

This Final Assignment use *WiMAX-3GPP Interworking scenario 3* recommended by WiMAX Forum. The research modeling is in the downlink direction, where *Correspondent Node (CN)* send a data into MN in mobile WiMAX network, but when still sending the data MN make handover into 3G network. The interworking system analyze and evaluation done by protocol, where every protocol that involved in communication data in mobile WiMAX, 3G Network also MIPv6 process will be analyzed.

The interworking system analyze and evaluation result shows that the data communication at the begining are not giving maximum performance, because the system must do *CoA* addressing, Binding Update-Acknowledge (BU-BA) MN with Home Agent (HA), also BU-BA MN with CN. This interworking system give maximum performance when the CN are capable to communicate directly with MN without HA involved between. RADIUS involved in *Authorization, Authentication, Accounting* (AAA) process between MN, mobile WiMAX, and 3G network. MIPv6 *routing header* change the destination address in IPv6 header from MN CoA into MN HoA when packet accepted in MN, so the replacement of IP address process undetect by system.