ABSTRACT

The main characteristic of 2G/3G cellular system is connection-oriented communication circuit switch (CS) mode, which is oriented to the occupation communication channel by its end to end terminal. With the characteristics of CS, the voice traffic, real-time messaging and streaming can be provided with reliable. However, 2G/3G systems have a complex network structure and needs a variety of protocols for the entire system. Departing from this complexity, the cellular network in the future are designed to have a simple structure that the whole Internet Protocol-based (all-IP).

At the present time, Internet Protocol (IP) promises flexibility and integration capabilities of complex systems that are reliable. A-Interface is the interface between BSC and MSC. In the konvensioanal system, A-interface consists of one or more PCM links between the MSC and BSC, with a capacity in which each link is 2 Mbps. To improve the efficiency and flexibility, integration with MSC BSC can be implemented with the IP protocol, known as AoIP. In this final project, its integrated BSC and MSC using the transmission of Internet Protocol (IP over A-interface).

After integration process has successful, then interoperability test performed. The test includes voice testcall,, location update test, test handover and multihoming testing. Location update goes well with the test scenarios attach imsi, imsi normal location update and detach. Voice call goes well with the internal test scenarios BSC, inter-BSC (AoIP to AoTDM and AoTDM to AoIP), BSC to the RNC and the RNC to the BSC. And the call from the PSTN AoIP. Handover goes well with intracell handover scenario, Intercell handover, inter BSC (AoIP to AoTDM), and intersystem handovers (2G to 3G). While multihoming happen one way test call, because one of the MGW IP traffic channel is not reachable.

Key word : A-interface over IP, GSM, Internet Protocol.