ABSTRACT

The development of mobile communication technology grow rapidly. This is indicated with more people who need telecommunication facility when they are out-side fixed network. The development in this technology has been signed with convergance any kind media e.g. computer, audio, video, and telecommunication. UMTS is one of key to carry telecommunication to era multimedia service.

This final project study about analysis of migration planning from GSM to UMTS network. This study in concentrated in radio network planning, network dimensioning, and link transmission planning between node-B to RNC and encover need of SDH Capacity. The process of UMTS cellular network planning calculate condition of existing GSM network, GSM user data used for estimation of UMTS user service and capacity of link transmission system. Therefore, the solution in this final project, author use data from PT Indosat Bandung which plan in deploying UMTS network.

Result from UMTS network planning give total cell is 25 cells which divided into 18 cells in urban area and 7 cells for sub urban area, while number of RNC is 1 RNC. And then the total cell is mapped on existing network (GSM) over sites sharing and transmission sharing, so that can produce recommendation of STM-1 upgrading into 3 links, capacity sharing 2 links and to add 4 E1 in 1 link.

Keywords : UMTS, Network planning, RAN dimensioning, WCDMA, Sites sharing and transmission sharing, SDH, ATM.