Abstract

Communication system that used by divisions in Husein Sastranegara Internasional Airport still use conventional communication system (non-trunked) in frequency 467 MHz. frequency limited condition, while traffic aspect for their necessity still increase. Terrestrial Trunked Radio (TETRA) with its frequency 410-430 MHz can be one of solution to necessity their requirement.

In this final project, planning TETRA network with planning method that used are capacity planning (determine number of channel that needed) with Erlang C model for helping that, and coverage planning based on radio link power budget parameter to determine the value of MAPL and with Okumura Hata propagation model can get the value of radius cell (wide coverage area). Then, simulating it using software simulator based on the result of its calculation.

TETRA network planning result with planning capacity method requires 3 channels. Then with coverage planning can get two sites that be equipped sectoral antenna with its optimum configuration are: first antenna (azimuth 300^{o} and elevation angle 0^{o}) and second antenna (azimuth 88^{o} and elevation angle 0^{o}) with its radius cell is 1,47 km. Simulation result of TETRA network in 3^{rd} scenario with 3^{rd} experiment get maximum value of its receive signal is -91 dBm.

Keywords: conventional communication system, trunked radio communication system, TETRA, *capacity planning*, *coverage planning*.