

## ABSTRACT

It is unefficient to provide sufficient equipment to carry all the traffic that could possibly be offered to a telecommunication system. The situation can therefore arise that all network available are busy, and so it can accept no further calls. This state is known as congestion. Refer to GSM network, congestion could possibly happen in every unit in the system, like Base Station Subsystem, Network Subsystem, or GSM external network.

The only real solution for congestion is to expand the existing coverage area or even planning to build new sites into the network. By using Handover (HO) and Power Control (PC), we can apply techniques to make congestion decrease in the GSM network, those are Call Queueing, Directed Retry, Congestion Relief (CR), and Enhanced Congestion Relief (ECR).

This final project will only studying and analyzing the performance of ECR technique, by taken a case in GSM network of PT Telkomsel Bandung.

CR technique, re-directs existing established MS to other cells when a cell is unable to serve new calls reaching a predetermined level of traffic. If a cell experiences congestion, active calls may be handed over to neighbour cells if a reduced HO margin is exceeded. CR has it's two types, CR type 1 and CR type 2.

ECR technique, expand the decision process for handover to include the state of congestion at the target cell, and introducing the timer usage.

Analyzing ECR technique in cell-site of GSM network, can be taken the parameters of TCH blocking, call, handovers, and the effects to neighbour cells that eventually applied in Merdeka 1 site on February 15 to 28 year 2001.