ABSTRACT

MSC (Mobile Switching Centre) is a core element of a cellular network, where the role is to interconnect between cellular *subcribers*, with PSTN wired telephone network, or moreover with data network.

Because it is a core element, it is important to design an MSC that has high resiliency and redundancy. This can be achieved by making the group of several MSCs called the MSC pool, so that mobile customers who were originally only served by one MSC, by applying the concept of the pool, customer can also be served by another MSC located in the same pool if the default MSC / anchor having a disturbance or being faulty. Customers will be allocated in a sequential method based on round robin algorithm.

Based on the simulation results, MSC pool provides better performance value compared to the network that does not apply the pool concept. In MSC *pool*, LUSR value > 0% when one MSC having a disturbance, subscriber of another MSC in one pool can be handled 78% up to 100% depending on the available and designed capacity of each MSC in the pool, and the availability value can be enhanced 6,2% compared with the MSC in the cellular network without pool.

Keywords: MSC pool, MSC default/anchor, round robin algorithm, LUSR, availability