

ABSTRACT

3GPP Long Term Evolution or LTE is a communication standard for wireless data access based on GSM / EDGE and UMTS / HSPA. 3GPP Long Term Evolution (LTE) is marketed under the name 4G LTE. 4G LTE network architecture is composed of three main parts: User Equipment (UE), Evolved Packet Core Network (EPC), and the Evolved UMTS Terrestrial Radio Access Network (E-UTRAN). UE or ME (Mobile Equipment) containing a mobile phone and a SIM (Subscriber Identity Module) called USIM. 4G LTE core network has only packet switched domain to support voice network, And in this study using a CS Fallback.

In this final task discussed about a core network planning 4G LTE network in Bandung with a case study of PT Telkomsel until 2020. The process of dimensioning in this study was sought after the number of elements necessary tools, and the CS fallback requires MSS to handle voice services. In the case study of PT Telkomsel, PT Telkomsel has not been put on the IP Multimedia Subsystem, and yet using Voice Over LTE (VoLTE), so use the method of CS Fallback To serve voice services, by diverting voice services in 4G networks to the 3G network. in the process of preparation of this final task collected data of population, traffic, existing networks are useful in dimensioning stage.

From the planning, then to be able implement 4G LTE network CS Fallback in Bandung, required MSS, HSS, MME, S / PGW. MSS minimum required for 6 pieces, the necessary HSS 1 piece, MME takes a minimum of 3 pieces, SGW-PGW required 1 pieces. From the planning. Signaling interfaces such as S6A, S11, S10, S1-MME require wide bandwidth 269, 191 Mbps, User Plane Interface For S5 / S8, S1-U, SGI, require wide bandwidth 13 Gbps or 96,91 Gbps. This Final task resulted an initial planning application of 4G LTE core network using a CS Falback in Bandung with a case study of PT Telkomsel.

Keywords : 3GPP LTE, 4G LTE, EPC, Network Planning, Core Network