

DAFTAR ISI

LEMBAR PENGESAHAN	i
LEMBAR PERNYATAAN ORISINALITAS	ii
ABSTRAK.....	iii
ABSTRACT.....	iv
KATA PENGANTAR	v
UCAPAN TERIMAKASIH.....	vi
DAFTAR ISI.....	viii
DAFTAR GAMBAR	xi
DAFTAR TABEL.....	xii
DAFTAR ISTILAH	xiii
DAFTAR SINGKATAN	xiv
BAB I PENDAHULUAN	1
1.1 Latar Belakang	1
1.2 Rumusan Masalah	2
1.3 Batasan Masalah	2
1.4 Maksud dan Tujuan.....	3
1.5 Metodologi Penelitian	3
1.6 Sistematika Penulisan	3
BAB II DASAR TEORI	5
2.1 Perkembangan Teknologi Seluler	5
2.2 LTE Advanced	6
2.2.1 Perbandingan Persyaratan Performa LTE dan LTE-Advanced.....	6
2.2.2 UE Category LTE dan LTE Advanced.....	7
2.2.3 Arsitektur jaringan LTE-Advanced	8
2.3 Carrier Aggregation.....	9
2.3.1 Fitur carrier aggregation	10
2.4 Alokasi Spektrum Frekuensi Untuk Penggelaran LTE	10
2.5 Frekuensi LTE FDD dan TDD	10
2.5.1 Frekuensi LTE FDD	11
2.5.2 Frekuensi LTE TDD	12
2.6 Band Frekuensi LTE-Advanced.....	12

2.7 Spektrum Frekuensi Operator Indonesia.....	13
2.7.1 Frekuensi 1800 MHz	13
2.7.2 Frekuensi 850 MHz	13
2.8 Capacity Planning	14
2.8.1 Forecasting Number of User	14
2.8.2 Service Model dan Traffik Model	14
2.8.3 Peak To Average in Enviroment	15
2.8.4 Single User Throughput	15
2.8.5 Network Throughput	15
2.8.6 Radio Overhead	15
2.8.7 Cell Capacity.....	16
2.8.8 LTE Site Selection & Criteria	17
2.9 Coverage Planning	18
2.9.1 Link Budget	18
2.9.2 Propagation Model.....	22
2.9.3 Perhitungan Luas Sel	23
2.9.4 Perhitungan Jumlah Sel	23
2.10 Frequency planning	23
2.10.1 ICIC (Inter-cell interference coordination).....	23
2.11 PCI (Physical Cell Identity) Planning	26
2.11.1 Syarat Alokasi PCI	26
2.11.2 Skenario Alokasi PCI	26
BAB III PERENCANAAN JARINGAN LTE DAN LTE-A	27
3.1 Diagram Alur	27
3.2 Analisis Area.....	28
3.3 Spesification Device LTE and LTE-A	28
3.4 Carrier Anggegation.....	29
3.5 Alokasi Spektrum Frekuensi 850 MHz dan 1800 MHz.....	30
3.5.1 Frekuensi 1800 MHz.....	30
3.5.2 Frekuensi 850 MHz.....	31
3.6 Penataan Bandwidth Frekuensi	31
3.4 Frequency Planning.....	32
3.5 Capacity planning	33

3.5.1 Forecasting number of user.....	33
3.5.2 Service model parameter.....	33
3.5.3 Traffik Model.....	34
3.5.4 Single User Throughput.....	34
3.5.5 Network Throughput.....	34
3.5.6 Radio Overhead.....	35
3.5.7 Average SINR 1800 MHz Distribution	35
3.5.8 Average SINR 850 MHz Distribution	35
3.5.9 Site Calculation.....	36
3.5.10 Pemilihan Site Berdasarkan Kriteria.....	36
3.6 Coverage Planning	37
3.6.1 Input Parameter.....	37
3.6.2 Maximum Allowable Pathloss of Uplink	37
3.6.3 MAPL Downlink and Uplink	38
3.6.4 Perhitungan jari jari sel.....	38
BAB IV ANALISIS DAN SIMULASI	41
4.1 Analisis hasil perencanaan jaringan berdasakan capacity dan coverage	41
4.2 LTE & LTE-A Prediction	42
4.2.1 Pengaruh Penggunaan Carrier Aggregation.....	42
4.2.2 Pengaruh PCI Terhadap Performa jaringan LTE dan LTE-A.....	43
4.2.3 Pengaruh SFR Terhadap Performa jaringan LTE dan LTE-A.....	44
4.2 LTE and LTE-A Simulation	46
4.2.2 LTE Planning Simulation.....	47
4.2.3 LTE-A Planning Simulation	48
PENUTUP.....	49
5.1 Kesimpulan	49
5.2 Saran.....	50
DAFTAR PUSTAKA	51
LAMPIRAN A.....	52