

## DAFTAR ISI

LEMBAR PENGESAHAN.....	ii
LEMBAR PERNYATAAN ORSINILITAS.....	iii
ABSTRAK .....	iv
ABSTRACT .....	v
KATA PENGANTAR .....	vi
UCAPAN TERIMAKASIH.....	vii
DAFTAR GAMBAR .....	xii
DAFTAR TABEL.....	xiii
DAFTAR ISTILAH .....	xiv
DAFTAR SINGKATAN .....	xv
BAB I PENDAHULUAN .....	1
1.1    Latar Belakang.....	1
1.2    Tujuan.....	2
1.3    Rumusan Masalah .....	2
1.4    Batasan Masalah.....	2
1.5    Metodologi.....	3
1.6    Sistematika penulisan .....	4
BAB II DASAR TEORI.....	5
2.1 <i>Long Term Evolution (LTE)</i> .....	5
2.1.1    Arsitektur <i>Long Term Evolution (LTE)</i> .....	5
2.2 <i>Long Term Evolution - Advanced</i> .....	6
2.3    Perbandingan performa LTE dan LTE-A .....	7
2.4    Alokasi Frekuensi LTE.....	7
2.5    Konsep Duplexing LTE.....	9
2.5.1 <i>Time-division duplex (TDD)</i> .....	9
2.5.2 <i>Frequency-division duplex (FDD)</i> .....	12
2.6 <i>Carrier Aggregation</i> .....	10
2.6.1 <i>Carrier Aggregation Spectrum Scenario</i> .....	11
2.6.2 <i>Carrier Aggregation Deployment Scenario</i> .....	12
2.6.3    Perangkat Pendukung .....	13
2.6.4    Kelebihan <i>Carrier Aggregation</i> .....	14
2.7    Parameter <i>Radio Frequency (RF) LTE</i> .....	14

2.7.1	<i>Reference Signal Received Power (RSRP)</i> .....	14
2.7.2	<i>Signal Interference Noise Ratio (SINR)</i> .....	15
2.7.3	<i>Throughput</i> .....	15
2.8	<i>Capacity Planning</i> .....	16
2.8.1	<i>Forecasting</i> .....	16
2.8.2	Trafik dan Model Layanan .....	16
2.9	<i>Coverage Planning</i> .....	19
2.9.1	<i>Link Budget</i> .....	19
2.9.2	Model Propagasi.....	22
BAB III	PERANCANGAN CARRIER AGGREGATION .....	23
3.1	Deskripsi Proyek Akhir .....	23
3.2	Diagram Alir.....	23
3.3	Analisis Daerah .....	24
3.4	<i>Drivetest</i> .....	24
3.5	<i>Ploting Site dan Transmitter</i> .....	27
3.6	Perencanaan Peningkatan Kapasitas.....	27
3.7	<i>Capacity planning</i> .....	28
3.7.1	<i>Forecasting Number of User</i> .....	28
3.7.2	<i>Service Model Parameter</i> .....	28
3.7.3	Trafik Model .....	29
3.7.4	<i>Single User Throughput</i> .....	30
3.7.5	<i>Network Throughput</i> .....	30
3.7.6	<i>Radio Overhead</i> .....	30
3.7.7	<i>Cell Avarage Throughput</i> .....	31
3.7.1	<i>Cell Calculation</i> .....	31
3.8	<i>Coverage Planning</i> .....	32
3.8.1	Input Parameter .....	32
3.8.2	<i>Maximum Allowable Pathloss (MAPL)</i> .....	33
3.8.3	Perhitungan jari-jari sel .....	33
3.9	<i>Carrier Aggregation</i> .....	35
3.9.1	Konfigurasi <i>Carrier Aggregation</i> .....	35
BAB IV	SIMULASI DAN ANALISIS.....	36
4.1	Simulasi Kondisi Jaringan <i>before LTE</i> .....	36

4.2	Simulasi Kondisi Jaringan LTE-Advanced.....	39
4.2.1	Simulasi Skenario 1.....	39
4.2.2	Simulasi Skenario 2.....	42
4.3	Analisis Hasil Akhir .....	45
BAB V	PENUTUP.....	47
DAFTAR	PUSTAKA .....	49
LAMPIRAN.....		50