

## DAFTAR ISI

<b>LEMBAR PENGESAHAN .....</b>	<b>ii</b>
<b>LEMBAR PERNYATAAN ORISINALITAS .....</b>	<b>iii</b>
<b>ABSTRAK .....</b>	<b>iv</b>
<b>ABSTRACT .....</b>	<b>v</b>
<b>UCAPAN TERIMA KASIH .....</b>	<b>vi</b>
<b>KATA PENGANTAR.....</b>	<b>viii</b>
<b>DAFTAR ISI.....</b>	<b>ix</b>
<b>DAFTAR GAMBAR.....</b>	<b>xii</b>
<b>DAFTAR TABEL .....</b>	<b>xiii</b>
<b>DAFTAR SINGKATAN.....</b>	<b>xiv</b>
<b>DAFTAR LAMPIRAN.....</b>	<b>xv</b>
<b>BAB I PENDAHULUAN.....</b>	<b>1</b>
1.1    Latar Belakang Masalah .....	1
1.2    Rumusan Masalah .....	2
1.3    Tujuan dan Manfaat.....	3
1.4    Batasan Masalah.....	3
1.5    Metode Penelitian.....	3
1.6    Sistematika Penulisan.....	4
<b>BAB II KONSEP DASAR .....</b>	<b>6</b>
2.1    LTE-Advanced .....	6
2.2 <i>Heterogeneous Network</i> .....	6
2.3 <i>Enhanced Inter-Cell Interference Coordination (eICIC)</i> .....	9
2.3.1    Mekanisme eICIC .....	9
2.4    RF Parameter .....	10
2.5 <i>Capacity Planning</i> .....	11
2.5.1 <i>Forecasting Number of User</i> .....	11
2.5.2    Perhitungan <i>Throughput</i> .....	12
2.5.3 <i>Single User Throughput</i> .....	13
2.5.4 <i>Network Throughput</i> .....	13
2.5.5    Perhitungan <i>Cell Average Throughput</i> .....	14
2.5.6 <i>Total Number of Site</i> .....	14

2.6	<i>Coverage Planning</i> .....	14
2.6.1	<i>Maximum Allowable Path Loss Arah Downlink</i> .....	14
2.6.2	<i>Maximum Allowable Path Loss Arah Uplink</i> .....	16
2.6.3	Model Propagasi dan Radius <i>Cell</i> .....	17
2.6.4	<i>Total Number of Site</i> .....	18
2.7	<i>WalkTest</i> .....	18
2.8	<i>Software Pendukung</i> .....	18
2.8.1	<i>TEMS Pocket</i> .....	18
2.8.2	<i>Radiowave Propagation Simulator (RPS)</i> .....	19
2.8.3	<i>Atoll</i> .....	19
<b>BAB III MODEL SISTEM DAN PERANCANGAN</b> .....		<b>20</b>
3.1	Deskripsi Tugas Akhir.....	20
3.1.1	Proses Pengerjaan Tugas Akhir .....	20
3.1.2	Model Sistem Perancangan.....	22
3.2	Pengumpulan Data dan Survey .....	24
3.3	RF Parameter .....	26
3.3.1	<i>Reference Signal Received Power (RSRP)</i> .....	26
3.3.2	<i>Signal to Interference Noise Ratio (SINR)</i> .....	26
3.4	Analisis Hasil <i>Walktest</i> .....	27
3.4.1	Identifikasi Lantai 3 .....	27
3.4.2	Identifikasi Lantai 11 .....	28
3.4.3	Identifikasi Lantai 20 .....	30
3.5	Spesifikasi Perangkat .....	31
3.6	<i>Capacity Calculation</i> .....	31
3.6.1	<i>Forecasting Number of User</i> .....	32
3.6.2	<i>Single User Throughput (SUT)</i> .....	34
3.6.3	<i>Network Throughput</i> .....	35
3.6.4	<i>Cell Average Throughput</i> .....	35
3.6.5	<i>Total Number of Site</i> .....	36
3.7	<i>Coverage Calculation</i> .....	37
3.7.1	Penentuan Perangkat.....	38
3.7.2	<i>Maximum Allowable Path Loss (MAPL)</i> .....	38
3.7.3	Perhitungan Model Propagasi dan <i>Radius Cell</i> .....	39

3.7.4	Perhitungan <i>Cell/Site</i> .....	40
<b>BAB IV SIMULASI DAN ANALISA.....</b>		<b>41</b>
4.1	Pendahuluan .....	41
4.2	Pemilihan Jumlah <i>Site</i> .....	41
4.3	Peletakan Perangkat .....	42
4.3.1	Analisa Skenario Lantai 3.....	42
4.3.2	Analisa Skenario Lantai 11 .....	44
4.3.3	Analisa Skenario Lantai 20.....	45
4.4	Simulasi Kondisi <i>Before Hetnet</i> .....	46
4.4.1	Analisa RSRP <i>before Hetnet</i> .....	47
4.4.2	Analisa SINR <i>before Hetnet</i> .....	48
4.4.3	Analisa <i>Throughput before Hetnet</i> .....	50
4.4.4	Analisa <i>User Connected before Hetnet</i> .....	53
4.5	Simulasi Kondisi <i>After Hetnet</i> .....	54
4.5.1	Analisa RSRP <i>after Hetnet</i> .....	54
4.5.2	Analisa SINR <i>after Hetnet</i> .....	55
4.5.3	Analisa <i>Throughput after Hetnet</i> .....	55
4.5.4	Analisa <i>User Connected after Hetnet</i> .....	57
4.6	Simulasi Kondisi <i>After Hetnet with eICIC</i> .....	57
4.7	Hasil Rekapitulasi.....	59
<b>BAB V KESIMPULAN DAN SARAN .....</b>		<b>62</b>
5.1	Kesimpulan.....	62
5.2	Saran .....	63
<b>DAFTAR PUSTAKA .....</b>		<b>64</b>
<b>LAMPIRAN.....</b>		<b>65</b>