

DAFTAR ISI

LEMBAR PENGESAHAN TUGAS AKHIR	i
LEMBAR PERNYATAAN ORISINALITAS	ii
ABSTRAK	iii
ABSTRACT	iv
KATA PENGANTAR.....	v
UCAPAN TERIMA KASIH.....	vi
DAFTAR ISI.....	vii
DAFTAR GAMBAR.....	x
DAFTAR TABEL	xi
BAB I PENDAHULUAN.....	1
1.1 Latar Belakang.....	1
1.2 Rumusan Masalah	2
1.3 Tujuan dan Manfaat Penelitian.....	2
1.4 Batasan Masalah.....	3
1.5 Metode Penelitian.....	3
BAB II KONSEP DASAR	5
2.1 Teknologi Komunikasi <i>5G</i>	5
2.2 Device to Device (D2D).....	6
2.3 Jenis – jenis Komunikasi <i>D2D</i>	7
2.3.1 Device Relaying with Operator Controller Link Establishment (DR-OC)	7
2.3.2 Direct D2D Communications with Operator Controller Link Establishment (DC-OC).....	8
2.3.3 Device Relaying with Device Controlled Link Establishment (DR-DC)	9
2.3.4 Direct D2D Communication with Device Controlled Link Establishment (DC-DC).....	10
2.4 Resource Block (RB).....	10
2.5 Algoritma Genetika	11

2.5.1	Inisialisasi.....	12
2.5.2	Evaluasi	12
2.5.3	Crossover	12
2.5.4	Mutasi.....	13
2.6	Algoritma Particle Swarm Optimization (PSO).....	14
2.7	Water Filling Power Control	14
2.8	Signal Interference to Noise Ratio (SINR).....	15
2.9	Pathloss.....	16
2.10	Cost 231-Hatta.....	16
2.11	Quality of Service (QoS).....	17
2.11.1	Average User Throughput.....	17
2.11.2	Efisiensi Spektral	18
2.11.3	Fairness	18
BAB III PERANCANGAN SISTEM		19
3.1	Model Sistem.....	19
3.2	Alur Penelitian.....	21
3.3	Formulasi Masalah	21
3.5	Penyebaran User.....	22
3.6	Channel State Information (CSI).....	22
3.7	Algoritma yang Diusulkan	24
3.7.1	Algoritma Genetika.....	24
3.7.2	Algoritma PSO	25
3.8	Skema Water Filling Power Control	27
3.9	Skenario Simulasi.....	28
3.10	Skema Simulasi	29
BAB IV HASIL SIMULASI DAN ANALISIS		30
4.1	Tinjauan Umum.....	30
4.2	Hasil Simulasi.....	30
4.2.1	Skenario Variasi Jumlah <i>User</i>	30
4.2.2	Skenario Variasi Jumlah PRB	35
4.3	Analisis Keseluruhan Sistem.....	40
BAB V KESIMPULAN DAN SARAN		42

5.1	Kesimpulan.....	42
5.2	Saran.....	43
DAFTAR PUSTAKA.....		44