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LAMPIRAN

Lampiran 1. Tabel panjang setiap ruas jalan pada peta Kota Makassar beserta ID ruas jalan

No. Ruas	ID	Panjang Ruas	No. Ruas	ID	Panjang Ruas
1	778506530#3	283.97	65	-196460228	210.12
2	778506530#2	46.79	66	275859863#2	148.09
3	778506530#1	100.54	67	169059039	142.46
4	778506530#0	215.08	68	275859863#1	146.24
5	205583532#1	125.61	69	-169059096	201.99
6	-190748716#0	235.27	70	227907164	180.62
7	190748872#0	132.31	71	33656071#3	181.62
8	190748872#1	81.47	72	33656071#4	138.00
9	-195273733#1	115.22	73	-552545226	59.04
10	169059087	250.52	74	169059014#4	75.62
11	-169059086	250.09	75	-169059014#3	38.87
12	932252873#0	249.50	76	169059014#2	38.00
13	33656071#0	153.75	77	169059014#1	62.69
14	33656071#1	296.99	78	169059023	67.85
15	578265898	147.24	79	169059014#0	67.85
16	227901069#0	121.59	80	-576628967	128.48
17	169059157#1	133.97	81	169059036	37.34
18	932252873#1	51.19	82	-698820404	68.36
19	-169059138#0	50.38	83	-190748716#5	149.22
20	-169059138#1	99.61	84	760457816	40.12
21	-169059164#5	75.37	85	-169059022#0	76.27
22	-195273733#0	115.71	86	-275859863#0	40.78
23	909692928	73.58	87	-169059022#1	61.37
24	190748872#2	151.74	88	-169059044	129.54
25	761192589	97.76	89	-169059101	108.29
26	190748716#1	193.98	90	-169059099#0	119.86
27	195273717	122.73	91	169059099#1	65.07
28	-169059164#4	49.39	92	-559610964#5	50.30
29	169059069	200.47	93	577925749	131.26
30	-169059024	200.32	94	169059091#1	110.85
31	-932252873#2	49.85	95	-760458448#1	36.08
32	-169059157#0	49.73	96	169059091#0	76.56
33	-275861094	58.19	97	-746880889	154.51
34	227901069#1	91.93	98	190748716#6	165.30
35	-275861093#1	62.85	99	-576628970#1	189.85
36	-275861093#0	57.30	100	-760458448#0	178.48

37	169059094#1	214.29	101	-760458449	187.20
38	169059094#0	90.13	102	-559610964#4	136.37
39	-169059164#3	43.07	103	702377543	284.45
40	-195273732#1	120.11	104	-275861089#0	61.16
41	190748872#3	40.62	105	-275861089#1	56.80
42	195273732#0	73.76	106	-275861091	57.23
43	190748716#2	83.27	107	-275861090#1	61.07
44	578265796	72.97	108	559610964#3	23.09
45	195273731#1	40.63	109	-559610964#2	17.99
46	-195273731#2	65.06	110	559610964#1	20.97
47	-169059164#1	52.61	111	-559610964#0	30.40
48	-195273713	209.41	112	-747977169	92.91
49	-895220253	172.04	113	-760458777	35.91
50	275861092	167.37	114	-275859868	61.52
51	33656071#2	165.67	115	760458450	30.29
52	-60334974#0	60.25	116	-577925758	60.05
53	-60334974#1	84.26	117	-576628970#0	53.89
54	60334974#3	228.06	118	-416294315#0	123.95
55	-60334974#4	92.84	119	-416294315#1	48.32
56	-169059164#0	158.82	120	-576628960	95.90
57	-60334974#5	37.96	121	190748716#7	68.66
58	-60334974#6	22.75	122	196063958#0	106.47
59	-578265837	150.34	123	196063958#1	136.83
60	-60334974#7	43.15	124	-196063958#2	32.87
61	-195273731#0	141.92	125	-196063958#3	112.86
62	60334974#8	45.95	126	-196063958#4	62.77
63	190748716#3	136.70	127	196063958#5	88.61
64	-190748716#4	207.44	128	196063958#6	64.25

Lampiran 2. Kode program hasil mobilitas (mobility.tcl)

```
$node_(0) set X_ 1059.47
$node_(0) set Y_ 612.86
$node_(0) set Z_ 0
$ns_ at 0.0 "$node_(0) setdest 1059.47 612.86 0.00"
$node_(1) set X_ 364.46
$node_(1) set Y_ 280.89
$node_(1) set Z_ 0
$ns_ at 1.0 "$node_(1) setdest 364.46 280.89 0.00"
$node_(2) set X_ 106.84
$node_(2) set Y_ 968.15
$node_(2) set Z_ 0
$ns_ at 2.0 "$node_(2) setdest 106.84 968.15 0.00"
$node_(3) set X_ 646.53
$node_(3) set Y_ 285.87
$node_(3) set Z_ 0
$ns_ at 3.0 "$node_(3) setdest 646.53 285.87 0.00"
$node_(4) set X_ 1038.45
$node_(4) set Y_ 376.86
$node_(4) set Z_ 0
$ns_ at 4.0 "$node_(4) setdest 1038.45 376.86 0.00"
$node_(5) set X_ 540.35
$node_(5) set Y_ 628.87
$node_(5) set Z_ 0
$ns_ at 5.0 "$node_(5) setdest 540.35 628.87 0.00"
$node_(6) set X_ 390.79
$node_(6) set Y_ 451.01
$node_(6) set Z_ 0
$ns_ at 6.0 "$node_(6) setdest 390.79 451.01 0.00"
$node_(7) set X_ 103.23
$node_(7) set Y_ 850.23
$node_(7) set Z_ 0
$ns_ at 7.0 "$node_(7) setdest 103.23 850.23 0.00"
$node_(8) set X_ 540.35
$node_(8) set Y_ 628.87
$node_(8) set Z_ 0
$ns_ at 8.0 "$node_(8) setdest 540.35 628.87 0.00"
$node_(9) set X_ 457.64
$node_(9) set Y_ 140.17
$node_(9) set Z_ 0
$ns_ at 9.0 "$node_(9) setdest 457.64 140.17 0.00"
$node_(10) set X_ 164.32
$node_(10) set Y_ 186.68
$node_(10) set Z_ 0
$ns_ at 10.0 "$node_(10) setdest 164.32 186.68 0.00"
$node_(11) set X_ 90.68
$node_(11) set Y_ 844.4
$node_(11) set Z_ 0
$ns_ at 12.0 "$node_(11) setdest 90.68 844.4 0.00"
$node_(12) set X_ 654.4
$node_(12) set Y_ 270.22
$node_(12) set Z_ 0
$ns_ at 13.0 "$node_(12) setdest 654.4 270.22 0.00"
```

```
$node_(13) set X_ 1212.42
$node_(13) set Y_ 602.22
$node_(13) set Z_ 0
$ns_ at 14.0 "$node_(13) setdest 1212.42 602.22 0.00"
$node_(14) set X_ 943.13
$node_(14) set Y_ 553.35
$node_(14) set Z_ 0
$ns_ at 14.0 "$node_(14) setdest 943.13 553.35 0.00"
$node_(15) set X_ 164.32
$node_(15) set Y_ 186.68
$node_(15) set Z_ 0
$ns_ at 15.0 "$node_(15) setdest 164.32 186.68 0.00"
$node_(16) set X_ 988.58
$node_(16) set Y_ 380.79
$node_(16) set Z_ 0
$ns_ at 16.0 "$node_(16) setdest 988.58 380.79 0.00"
$node_(17) set X_ 159.13
$node_(17) set Y_ 205.59
$node_(17) set Z_ 0
$ns_ at 17.0 "$node_(17) setdest 159.13 205.59 0.00"
$node_(18) set X_ 1195.6
$node_(18) set Y_ 410.64
$node_(18) set Z_ 0
$ns_ at 18.0 "$node_(18) setdest 1195.6 410.64 0.00"
$node_(19) set X_ 968.63
$node_(19) set Y_ 246.6
$node_(19) set Z_ 0
$ns_ at 19.0 "$node_(19) setdest 968.63 246.6 0.00"
$node_(20) set X_ 1277.0
$node_(20) set Y_ 603.65
$node_(20) set Z_ 0
$ns_ at 20.0 "$node_(20) setdest 1277.0 603.65 0.00"
$node_(21) set X_ 297.27
$node_(21) set Y_ 721.22
$node_(21) set Z_ 0
$ns_ at 21.0 "$node_(21) setdest 297.27 721.22 0.00"
$node_(22) set X_ 438.62
$node_(22) set Y_ 335.79
$node_(22) set Z_ 0
$ns_ at 22.0 "$node_(22) setdest 438.62 335.79 0.00"
$node_(23) set X_ 943.76
$node_(23) set Y_ 143.73
$node_(23) set Z_ 0
$ns_ at 23.0 "$node_(23) setdest 943.76 143.73 0.00"
$node_(24) set X_ 916.77
$node_(24) set Y_ 656.34
$node_(24) set Z_ 0
$ns_ at 24.0 "$node_(24) setdest 916.77 656.34 0.00"
$node_(25) set X_ 568.51
$node_(25) set Y_ 675.2
$node_(25) set Z_ 0
$ns_ at 25.0 "$node_(25) setdest 568.51 675.2 0.00"
$node_(26) set X_ 899.98
$node_(26) set Y_ 651.77
```



```
$node_(26) set Z_ 0
$ns_ at 26.0 "$node_(26) setdest 899.98 651.77 0.00"
$node_(27) set X_ 103.23
$node_(27) set Y_ 850.23
$node_(27) set Z_ 0
$ns_ at 27.0 "$node_(27) setdest 103.23 850.23 0.00"
$node_(28) set X_ 1036.33
$node_(28) set Y_ 621.62
$node_(28) set Z_ 0
$ns_ at 28.0 "$node_(28) setdest 1036.33 621.62 0.00"
$node_(29) set X_ 805.48
$node_(29) set Y_ 160.21
$node_(29) set Z_ 0
$ns_ at 31.0 "$node_(29) setdest 805.48 160.21 0.00"
$node_(30) set X_ 50.91
$node_(30) set Y_ 492.32
$node_(30) set Z_ 0
$ns_ at 32.0 "$node_(30) setdest 50.91 492.32 0.00"
$node_(31) set X_ 1223.62
$node_(31) set Y_ 530.56
$node_(31) set Z_ 0
$ns_ at 32.0 "$node_(31) setdest 1223.62 530.56 0.00"
$node_(32) set X_ 895.03
$node_(32) set Y_ 668.57
$node_(32) set Z_ 0
$ns_ at 33.0 "$node_(32) setdest 895.03 668.57 0.00"
$node_(33) set X_ 297.27
$node_(33) set Y_ 721.22
$node_(33) set Z_ 0
$ns_ at 33.0 "$node_(33) setdest 297.27 721.22 0.00"
$node_(34) set X_ 611.19
$node_(34) set Y_ 182.22
$node_(34) set Z_ 0
$ns_ at 34.0 "$node_(34) setdest 611.19 182.22 0.00"
$node_(35) set X_ 423.53
$node_(35) set Y_ 652.74
$node_(35) set Z_ 0
$ns_ at 35.0 "$node_(35) setdest 423.53 652.74 0.00"
$node_(36) set X_ 245.05
$node_(36) set Y_ 303.5
$node_(36) set Z_ 0
$ns_ at 36.0 "$node_(36) setdest 245.05 303.5 0.00"
$node_(37) set X_ 311.76
$node_(37) set Y_ 793.4
$node_(37) set Z_ 0
$ns_ at 37.0 "$node_(37) setdest 311.76 793.4 0.00"
$node_(38) set X_ 936.8
$node_(38) set Y_ 61.77
$node_(38) set Z_ 0
$ns_ at 38.0 "$node_(38) setdest 936.8 61.77 0.00"
$node_(39) set X_ 899.98
$node_(39) set Y_ 651.77
$node_(39) set Z_ 0
$ns_ at 39.0 "$node_(39) setdest 899.98 651.77 0.00"
```

```
$node_(40) set X_ 953.41
$node_(40) set Y_ 238.52
$node_(40) set Z_ 0
$ns_ at 40.0 "$node_(40) setdest 953.41 238.52 0.00"
$node_(41) set X_ 374.3
$node_(41) set Y_ 337.07
$node_(41) set Z_ 0
$ns_ at 41.0 "$node_(41) setdest 374.3 337.07 0.00"
$node_(42) set X_ 299.93
$node_(42) set Y_ 452.52
$node_(42) set Z_ 0
$ns_ at 43.0 "$node_(42) setdest 299.93 452.52 0.00"
$node_(43) set X_ 698.94
$node_(43) set Y_ 639.22
$node_(43) set Z_ 0
$ns_ at 44.0 "$node_(43) setdest 698.94 639.22 0.00"
$node_(44) set X_ 654.4
$node_(44) set Y_ 270.22
$node_(44) set Z_ 0
$ns_ at 44.0 "$node_(44) setdest 654.4 270.22 0.00"
$node_(45) set X_ 850.94
$node_(45) set Y_ 276.24
$node_(45) set Z_ 0
$ns_ at 45.0 "$node_(45) setdest 850.94 276.24 0.00"
$node_(46) set X_ 14.96
$node_(46) set Y_ 207.9
$node_(46) set Z_ 0
$ns_ at 46.0 "$node_(46) setdest 14.96 207.9 0.00"
$node_(47) set X_ 71.6
$node_(47) set Y_ 638.28
$node_(47) set Z_ 0
$ns_ at 47.0 "$node_(47) setdest 71.6 638.28 0.00"
$node_(48) set X_ 50.91
$node_(48) set Y_ 492.32
$node_(48) set Z_ 0
$ns_ at 48.0 "$node_(48) setdest 50.91 492.32 0.00"
$node_(49) set X_ 38.37
$node_(49) set Y_ 486.04
$node_(49) set Z_ 0
$ns_ at 49.0 "$node_(49) setdest 38.37 486.04 0.00"
$node_(50) set X_ 909.58
$node_(50) set Y_ 361.86
$node_(50) set Z_ 0
$ns_ at 50.0 "$node_(50) setdest 909.58 361.86 0.00"
$node_(51) set X_ 548.9
$node_(51) set Y_ 669.1
$node_(51) set Z_ 0
$ns_ at 51.0 "$node_(51) setdest 548.9 669.1 0.00"
$node_(52) set X_ 899.98
$node_(52) set Y_ 651.77
$node_(52) set Z_ 0
$ns_ at 52.0 "$node_(52) setdest 899.98 651.77 0.00"
$node_(53) set X_ 306.4
$node_(53) set Y_ 592.02
```

```
$node_(53) set Z_ 0
$ns_ at 53.0 "$node_(53) setdest 306.4 592.02 0.00"
$node_(54) set X_ 275.86
$node_(54) set Y_ 459.08
$node_(54) set Z_ 0
$ns_ at 54.0 "$node_(54) setdest 275.86 459.08 0.00"
$node_(55) set X_ 690.71
$node_(55) set Y_ 655.02
$node_(55) set Z_ 0
$ns_ at 55.0 "$node_(55) setdest 690.71 655.02 0.00"
$node_(56) set X_ 930.73
$node_(56) set Y_ 421.62
$node_(56) set Z_ 0
$ns_ at 56.0 "$node_(56) setdest 930.73 421.62 0.00"
$node_(57) set X_ 936.8
$node_(57) set Y_ 61.77
$node_(57) set Z_ 0
$ns_ at 57.0 "$node_(57) setdest 936.8 61.77 0.00"
$node_(58) set X_ 867.33
$node_(58) set Y_ 435.12
$node_(58) set Z_ 0
$ns_ at 58.0 "$node_(58) setdest 867.33 435.12 0.00"
$node_(59) set X_ 339.17
$node_(59) set Y_ 885.26
$node_(59) set Z_ 0
$ns_ at 59.0 "$node_(59) setdest 339.17 885.26 0.00"
$node_(60) set X_ 733.19
$node_(60) set Y_ 427.21
$node_(60) set Z_ 0
$ns_ at 60.0 "$node_(60) setdest 733.19 427.21 0.00"
$node_(61) set X_ 470.29
$node_(61) set Y_ 205.03
$node_(61) set Z_ 0
$ns_ at 61.0 "$node_(61) setdest 470.29 205.03 0.00"
$node_(62) set X_ 892.46
$node_(62) set Y_ 505.82
$node_(62) set Z_ 0
$ns_ at 62.0 "$node_(62) setdest 892.46 505.82 0.00"
$node_(63) set X_ 877.34
$node_(63) set Y_ 497.85
$node_(63) set Z_ 0
$ns_ at 63.0 "$node_(63) setdest 877.34 497.85 0.00"
$node_(64) set X_ 245.05
$node_(64) set Y_ 303.5
$node_(64) set Z_ 0
$ns_ at 64.0 "$node_(64) setdest 245.05 303.5 0.00"
$node_(65) set X_ 1188.81
$node_(65) set Y_ 100.68
$node_(65) set Z_ 0
$ns_ at 65.0 "$node_(65) setdest 1188.81 100.68 0.00"
$node_(66) set X_ 245.05
$node_(66) set Y_ 303.5
$node_(66) set Z_ 0
$ns_ at 67.0 "$node_(66) setdest 245.05 303.5 0.00"
```

```
$node_(67) set X_ 438.62
$node_(67) set Y_ 335.79
$node_(67) set Z_ 0
$ns_ at 67.0 "$node_(67) setdest 438.62 335.79 0.00"
$node_(68) set X_ 995.12
$node_(68) set Y_ 404.55
$node_(68) set Z_ 0
$ns_ at 69.0 "$node_(68) setdest 995.12 404.55 0.00"
$node_(69) set X_ 733.19
$node_(69) set Y_ 427.21
$node_(69) set Z_ 0
$ns_ at 69.0 "$node_(69) setdest 733.19 427.21 0.00"
$node_(70) set X_ 902.26
$node_(70) set Y_ 338.15
$node_(70) set Z_ 0
$ns_ at 70.0 "$node_(70) setdest 902.26 338.15 0.00"
$node_(71) set X_ 899.98
$node_(71) set Y_ 651.77
$node_(71) set Z_ 0
$ns_ at 71.0 "$node_(71) setdest 899.98 651.77 0.00"
$node_(72) set X_ 1038.45
$node_(72) set Y_ 376.86
$node_(72) set Z_ 0
$ns_ at 72.0 "$node_(72) setdest 1038.45 376.86 0.00"
$node_(73) set X_ 479.99
$node_(73) set Y_ 616.37
$node_(73) set Z_ 0
$ns_ at 73.0 "$node_(73) setdest 479.99 616.37 0.00"
$node_(74) set X_ 661.76
$node_(74) set Y_ 503.23
$node_(74) set Z_ 0
$ns_ at 74.0 "$node_(74) setdest 661.76 503.23 0.00"
$node_(75) set X_ 50.91
$node_(75) set Y_ 492.32
$node_(75) set Z_ 0
$ns_ at 76.0 "$node_(75) setdest 50.91 492.32 0.00"
$node_(76) set X_ 305.0
$node_(76) set Y_ 809.34
$node_(76) set Z_ 0
$ns_ at 76.0 "$node_(76) setdest 305.0 809.34 0.00"
$node_(77) set X_ 260.55
$node_(77) set Y_ 311.69
$node_(77) set Z_ 0
$ns_ at 77.0 "$node_(77) setdest 260.55 311.69 0.00"
$node_(78) set X_ 952.22
$node_(78) set Y_ 128.41
$node_(78) set Z_ 0
$ns_ at 78.0 "$node_(78) setdest 952.22 128.41 0.00"
$node_(79) set X_ 948.59
$node_(79) set Y_ 293.47
$node_(79) set Z_ 0
$ns_ at 80.0 "$node_(79) setdest 948.59 293.47 0.00"
$node_(80) set X_ 297.27
$node_(80) set Y_ 721.22
```

```
$node_(80) set Z_ 0
$ns_ at 82.0 "$node_(80) setdest 297.27 721.22 0.00"
$node_(81) set X_ 968.63
$node_(81) set Y_ 246.6
$node_(81) set Z_ 0
$ns_ at 82.0 "$node_(81) setdest 968.63 246.6 0.00"
$node_(82) set X_ 216.25
$node_(82) set Y_ 810.29
$node_(82) set Z_ 0
$ns_ at 83.0 "$node_(82) setdest 216.25 810.29 0.00"
$node_(83) set X_ 580.08
$node_(83) set Y_ 713.94
$node_(83) set Z_ 0
$ns_ at 84.0 "$node_(83) setdest 580.08 713.94 0.00"
$node_(84) set X_ 297.27
$node_(84) set Y_ 721.22
$node_(84) set Z_ 0
$ns_ at 85.0 "$node_(84) setdest 297.27 721.22 0.00"
$node_(85) set X_ 1180.01
$node_(85) set Y_ 321.05
$node_(85) set Z_ 0
$ns_ at 85.0 "$node_(85) setdest 1180.01 321.05 0.00"
$node_(86) set X_ 902.26
$node_(86) set Y_ 338.15
$node_(86) set Z_ 0
$ns_ at 87.0 "$node_(86) setdest 902.26 338.15 0.00"
$node_(87) set X_ 164.32
$node_(87) set Y_ 186.68
$node_(87) set Z_ 0
$ns_ at 87.0 "$node_(87) setdest 164.32 186.68 0.00"
$node_(88) set X_ 654.4
$node_(88) set Y_ 270.22
$node_(88) set Z_ 0
$ns_ at 88.0 "$node_(88) setdest 654.4 270.22 0.00"
$node_(89) set X_ 1038.45
$node_(89) set Y_ 376.86
$node_(89) set Z_ 0
$ns_ at 89.0 "$node_(89) setdest 1038.45 376.86 0.00"
$node_(90) set X_ 627.86
$node_(90) set Y_ 265.2
$node_(90) set Z_ 0
$ns_ at 92.0 "$node_(90) setdest 627.86 265.2 0.00"
$node_(91) set X_ 931.69
$node_(91) set Y_ 532.48
$node_(91) set Z_ 0
$ns_ at 92.0 "$node_(91) setdest 931.69 532.48 0.00"
$node_(92) set X_ 288.65
$node_(92) set Y_ 802.92
$node_(92) set Z_ 0
$ns_ at 94.0 "$node_(92) setdest 288.65 802.92 0.00"
$node_(93) set X_ 968.63
$node_(93) set Y_ 246.6
$node_(93) set Z_ 0
$ns_ at 95.0 "$node_(93) setdest 968.63 246.6 0.00"
```

```
$node_(94) set X_ 1038.45
$node_(94) set Y_ 376.86
$node_(94) set Z_ 0
$ns_ at 95.0 "$node_(94) setdest 1038.45 376.86 0.00"
$node_(95) set X_ 710.49
$node_(95) set Y_ 624.42
$node_(95) set Z_ 0
$ns_ at 96.0 "$node_(95) setdest 710.49 624.42 0.00"
$node_(96) set X_ 1246.66
$node_(96) set Y_ 241.57
$node_(96) set Z_ 0
$ns_ at 96.0 "$node_(96) setdest 1246.66 241.57 0.00"
$node_(97) set X_ 479.25
$node_(97) set Y_ 262.53
$node_(97) set Z_ 0
$ns_ at 97.0 "$node_(97) setdest 479.25 262.53 0.00"
$node_(98) set X_ 805.48
$node_(98) set Y_ 160.21
$node_(98) set Z_ 0
$ns_ at 98.0 "$node_(98) setdest 805.48 160.21 0.00"
$node_(99) set X_ 350.62
$node_(99) set Y_ 446.48
$node_(99) set Z_ 0
$ns_ at 99.0 "$node_(99) setdest 350.62 446.48 0.00"
```

Lampiran 3. Kode program koordinat *Road Side Unit* (rsu.tcl)

```
#RSU
$node_(172) set X_ 41.49
$node_(172) set Y_ 495.48
$node_(172) set Z_ 0
$node_(172) color "blue"
$ns_ at 0.0 "$node_(172) setdest 41.49 495.48 0"
$ns_ at 0.0 "$node_(172) color blue"
$node_(173) set X_ 47.95
$node_(173) set Y_ 541.82
$node_(173) set Z_ 0
$node_(173) color "blue"
$ns_ at 0.0 "$node_(173) setdest 47.95 541.82 0"
$ns_ at 0.0 "$node_(173) color blue"
$node_(174) set X_ 62.13
$node_(174) set Y_ 641.36
$node_(174) set Z_ 0
$node_(174) color "blue"
$ns_ at 0.0 "$node_(174) setdest 62.13 641.36 0"
$ns_ at 0.0 "$node_(174) color blue"
$node_(175) set X_ 93.81
$node_(175) set Y_ 854.09
$node_(175) set Z_ 0
$node_(175) color "blue"
$ns_ at 0.0 "$node_(175) setdest 93.81 854.09 0"
$ns_ at 0.0 "$node_(175) color blue"
$node_(176) set X_ 109.78
$node_(176) set Y_ 978.68
$node_(176) set Z_ 0
$node_(176) color "blue"
$ns_ at 0.0 "$node_(176) setdest 109.78 978.68 0"
$ns_ at 0.0 "$node_(176) color blue"
$node_(177) set X_ 222.04
$node_(177) set Y_ 821.49
$node_(177) set Z_ 0
$node_(177) color "blue"
$ns_ at 0.0 "$node_(177) setdest 222.04 821.49 0"
$ns_ at 0.0 "$node_(177) color blue"
$node_(178) set X_ 328.26
$node_(178) set Y_ 891.39
$node_(178) set Z_ 0
$node_(178) color "blue"
$ns_ at 0.0 "$node_(178) setdest 328.26 891.39 0"
$ns_ at 0.0 "$node_(178) color blue"
$node_(179) set X_ 299.99
$node_(179) set Y_ 797.81
$node_(179) set Z_ 0
$node_(179) color "blue"
$ns_ at 0.0 "$node_(179) setdest 299.99 797.81 0"
$ns_ at 0.0 "$node_(179) color blue"
$node_(180) set X_ 285.90
$node_(180) set Y_ 725.59
$node_(180) set Z_ 0
```

```
$node_(180) color "blue"
$ns_ at 0.0 "$node_(180) setdest 285.90 725.59 0"
$ns_ at 0.0 "$node_(180) color blue"
$node_(181) set X_ 309.83
$node_(181) set Y_ 603.88
$node_(181) set Z_ 0
$node_(181) color "blue"
$ns_ at 0.0 "$node_(181) setdest 309.83 603.88 0"
$ns_ at 0.0 "$node_(181) color blue"
$node_(182) set X_ 295.36
$node_(182) set Y_ 505.33
$node_(182) set Z_ 0
$node_(182) color "blue"
$ns_ at 0.0 "$node_(182) setdest 295.36 505.33 0"
$ns_ at 0.0 "$node_(182) color blue"
$node_(183) set X_ 287.77
$node_(183) set Y_ 455.52
$node_(183) set Z_ 0
$node_(183) color "blue"
$ns_ at 0.0 "$node_(183) setdest 287.77 455.52 0"
$ns_ at 0.0 "$node_(183) color blue"
$node_(184) set X_ 256.90
$node_(184) set Y_ 299.79
$node_(184) set Z_ 0
$node_(184) color "blue"
$ns_ at 0.0 "$node_(184) setdest 256.90 299.79 0"
$ns_ at 0.0 "$node_(184) color blue"
$node_(185) set X_ 155.50
$node_(185) set Y_ 193.03
$node_(185) set Z_ 0
$node_(185) color "blue"
$ns_ at 0.0 "$node_(185) setdest 155.50 193.03 0"
$ns_ at 0.0 "$node_(185) color blue"
$node_(186) set X_ 376.26
$node_(186) set Y_ 276.59
$node_(186) set Z_ 0
$node_(186) color "blue"
$ns_ at 0.0 "$node_(186) setdest 376.26 276.59 0"
$ns_ at 0.0 "$node_(186) color blue"
$node_(187) set X_ 386.46
$node_(187) set Y_ 333.88
$node_(187) set Z_ 0
$node_(187) color "blue"
$ns_ at 0.0 "$node_(187) setdest 386.46 333.88 0"
$ns_ at 0.0 "$node_(187) color blue"
$node_(188) set X_ 338.63
$node_(188) set Y_ 449.71
$node_(188) set Z_ 0
$node_(188) color "blue"
$ns_ at 0.0 "$node_(188) setdest 338.63 449.71 0"
$ns_ at 0.0 "$node_(188) color blue"
$node_(189) set X_ 388.03
$node_(189) set Y_ 443.05
$node_(189) set Z_ 0
```



```
$node_(189) color "blue"
$ns_ at 0.0 "$node_(189) setdest 388.03 443.05 0"
$ns_ at 0.0 "$node_(189) color blue"
$node_(190) set X_ 371.29
$node_(190) set Y_ 647.50
$node_(190) set Z_ 0
$node_(190) color "blue"
$ns_ at 0.0 "$node_(190) setdest 371.29 647.50 0"
$ns_ at 0.0 "$node_(190) color blue"
$node_(191) set X_ 420.22
$node_(191) set Y_ 640.77
$node_(191) set Z_ 0
$node_(191) color "blue"
$ns_ at 0.0 "$node_(191) setdest 420.22 640.77 0"
$ns_ at 0.0 "$node_(191) color blue"
$node_(192) set X_ 447.08
$node_(192) set Y_ 760.52
$node_(192) set Z_ 0
$node_(192) color "blue"
$ns_ at 0.0 "$node_(192) setdest 447.08 760.52 0"
$ns_ at 0.0 "$node_(192) color blue"
$node_(193) set X_ 508.83
$node_(193) set Y_ 820.51
$node_(193) set Z_ 0
$node_(193) color "blue"
$ns_ at 0.0 "$node_(193) setdest 508.83 820.51 0"
$ns_ at 0.0 "$node_(193) color blue"
$node_(194) set X_ 486.38
$node_(194) set Y_ 750.25
$node_(194) set Z_ 0
$node_(194) color "blue"
$ns_ at 0.0 "$node_(194) setdest 486.38 750.25 0"
$ns_ at 0.0 "$node_(194) color blue"
$node_(195) set X_ 462.50
$node_(195) set Y_ 632.54
$node_(195) set Z_ 0
$node_(195) color "blue"
$ns_ at 0.0 "$node_(195) setdest 462.50 632.54 0"
$ns_ at 0.0 "$node_(195) color blue"
$node_(196) set X_ 483.81
$node_(196) set Y_ 628.46
$node_(196) set Z_ 0
$node_(196) color "blue"
$ns_ at 0.0 "$node_(196) setdest 483.81 628.46 0"
$ns_ at 0.0 "$node_(196) color blue"
$node_(197) set X_ 468.28
$node_(197) set Y_ 539.68
$node_(197) set Z_ 0
$node_(197) color "blue"
$ns_ at 0.0 "$node_(197) setdest 468.28 539.68 0"
$ns_ at 0.0 "$node_(197) color blue"
$node_(198) set X_ 435.82
$node_(198) set Y_ 327.86
$node_(198) set Z_ 0
```

```
$node_(198) color "blue"
$ns_ at 0.0 "$node_(198) setdest 435.82 327.86 0"
$ns_ at 0.0 "$node_(198) color blue"
$node_(199) set X_ 467.48
$node_(199) set Y_ 265.18
$node_(199) set Z_ 0
$node_(199) color "blue"
$ns_ at 0.0 "$node_(199) setdest 467.48 265.18 0"
$ns_ at 0.0 "$node_(199) color blue"
$node_(200) set X_ 458.38
$node_(200) set Y_ 208.61
$node_(200) set Z_ 0
$node_(200) color "blue"
$ns_ at 0.0 "$node_(200) setdest 458.38 208.61 0"
$ns_ at 0.0 "$node_(200) color blue"
$node_(201) set X_ 448.82
$node_(201) set Y_ 146.49
$node_(201) set Z_ 0
$node_(201) color "blue"
$ns_ at 0.0 "$node_(201) setdest 448.82 146.49 0"
$ns_ at 0.0 "$node_(201) color blue"
$node_(202) set X_ 535.19
$node_(202) set Y_ 617.13
$node_(202) set Z_ 0
$node_(202) color "blue"
$ns_ at 0.0 "$node_(202) setdest 535.19 617.13 0"
$ns_ at 0.0 "$node_(202) color blue"
$node_(203) set X_ 554.94
$node_(203) set Y_ 679.12
$node_(203) set Z_ 0
$node_(203) color "blue"
$ns_ at 0.0 "$node_(203) setdest 554.144 679.12 0"
$ns_ at 0.0 "$node_(203) color blue"
$node_(204) set X_ 568.38
$node_(204) set Y_ 717.46
$node_(204) set Z_ 0
$node_(204) color "blue"
$ns_ at 0.0 "$node_(204) setdest 568.38 717.46 0"
$ns_ at 0.0 "$node_(204) color blue"
$node_(205) set X_ 585.64
$node_(205) set Y_ 788.36
$node_(205) set Z_ 0
$node_(205) color "blue"
$ns_ at 0.0 "$node_(205) setdest 585.64 788.36 0"
$ns_ at 0.0 "$node_(205) color blue"
$node_(206) set X_ 713.28
$node_(206) set Y_ 739.42
$node_(206) set Z_ 0
$node_(206) color "blue"
$ns_ at 0.0 "$node_(206) setdest 713.28 739.42 0"
$ns_ at 0.0 "$node_(206) color blue"
$node_(207) set X_ 708.30
$node_(207) set Y_ 693.74
$node_(207) set Z_ 0
```

```
$node_(207) color "blue"
$ns_ at 0.0 "$node_(207) setdest 708.30 693.74 0"
$ns_ at 0.0 "$node_(207) color blue"
$node_(208) set X_ 702.62
$node_(208) set Y_ 650.97
$node_(208) set Z_ 0
$node_(208) color "blue"
$ns_ at 0.0 "$node_(208) setdest 702.62 650.97 0"
$ns_ at 0.0 "$node_(208) color blue"
$node_(209) set X_ 698.70
$node_(209) set Y_ 628.56
$node_(209) set Z_ 0
$node_(209) color "blue"
$ns_ at 0.0 "$node_(209) setdest 698.70 628.56 0"
$ns_ at 0.0 "$node_(209) color blue"
$node_(210) set X_ 691.88
$node_(210) set Y_ 591.22
$node_(210) set Z_ 0
$node_(210) color "blue"
$ns_ at 0.0 "$node_(210) setdest 691.88 591.22 0"
$ns_ at 0.0 "$node_(210) color blue"
$node_(211) set X_ 673.92
$node_(211) set Y_ 500.13
$node_(211) set Z_ 0
$node_(211) color "blue"
$ns_ at 0.0 "$node_(211) setdest 673.92 500.13 0"
$ns_ at 0.0 "$node_(211) color blue"
$node_(212) set X_ 642.80
$node_(212) set Y_ 274.20
$node_(212) set Z_ 0
$node_(212) color "blue"
$ns_ at 0.0 "$node_(212) setdest 642.80 274.20 0"
$ns_ at 0.0 "$node_(212) color blue"
$node_(213) set X_ 639.47
$node_(213) set Y_ 261.03
$node_(213) set Z_ 0
$node_(213) color "blue"
$ns_ at 0.0 "$node_(213) setdest 639.47 261.03 0"
$ns_ at 0.0 "$node_(213) color blue"
$node_(214) set X_ 623.00
$node_(214) set Y_ 178.40
$node_(214) set Z_ 0
$node_(214) color "blue"
$ns_ at 0.0 "$node_(214) setdest 623.00 178.40 0"
$ns_ at 0.0 "$node_(214) color blue"
$node_(215) set X_ 612.21
$node_(215) set Y_ 119.12
$node_(215) set Z_ 0
$node_(215) color "blue"
$ns_ at 0.0 "$node_(215) setdest 612.21 119.12 0"
$ns_ at 0.0 "$node_(215) color blue"
$node_(216) set X_ 732.04
$node_(216) set Y_ 415.104
$node_(216) set Z_ 0
```

```
$node_(216) color "blue"
$ns_ at 0.0 "$node_(216) setdest 732.04 415.104 0"
$ns_ at 0.0 "$node_(216) color blue"
$node_(217) set X_ 906.02
$node_(217) set Y_ 662.72
$node_(217) set Z_ 0
$node_(217) color "blue"
$ns_ at 0.0 "$node_(217) setdest 906.02 662.72 0"
$ns_ at 0.0 "$node_(217) color blue"
$node_(218) set X_ 902.66
$node_(218) set Y_ 560.00
$node_(218) set Z_ 0
$node_(218) color "blue"
$ns_ at 0.0 "$node_(218) setdest 902.66 560.00 0"
$ns_ at 0.0 "$node_(218) color blue"
$node_(219) set X_ 936.07
$node_(219) set Y_ 543.33
$node_(219) set Z_ 0
$node_(219) color "blue"
$ns_ at 0.0 "$node_(219) setdest 936.07 543.33 0"
$ns_ at 0.0 "$node_(219) color blue"
$node_(220) set X_ 889.30
$node_(220) set Y_ 493.48
$node_(220) set Z_ 0
$node_(220) color "blue"
$ns_ at 0.0 "$node_(220) setdest 889.30 493.48 0"
$ns_ at 0.0 "$node_(220) color blue"
$node_(221) set X_ 879.26
$node_(221) set Y_ 431.60
$node_(221) set Z_ 0
$node_(221) color "blue"
$ns_ at 0.0 "$node_(221) setdest 879.26 431.60 0"
$ns_ at 0.0 "$node_(221) color blue"
$node_(222) set X_ 918.87
$node_(222) set Y_ 425.25
$node_(222) set Z_ 0
$node_(222) color "blue"
$ns_ at 0.0 "$node_(222) setdest 918.87 425.25 0"
$ns_ at 0.0 "$node_(222) color blue"
$node_(223) set X_ 872.88
$node_(223) set Y_ 394.14
$node_(223) set Z_ 0
$node_(223) color "blue"
$ns_ at 0.0 "$node_(223) setdest 872.88 394.14 0"
$ns_ at 0.0 "$node_(223) color blue"
$node_(224) set X_ 905.94
$node_(224) set Y_ 350.08
$node_(224) set Z_ 0
$node_(224) color "blue"
$ns_ at 0.0 "$node_(224) setdest 905.94 350.08 0"
$ns_ at 0.0 "$node_(224) color blue"
$node_(225) set X_ 865.59
$node_(225) set Y_ 355.96
$node_(225) set Z_ 0
```

```
$node_(225) color "blue"
$ns_ at 0.0 "$node_(225) setdest 865.59 355.96 0"
$ns_ at 0.0 "$node_(225) color blue"
$node_(226) set X_ 852.84
$node_(226) set Y_ 281.42
$node_(226) set Z_ 0
$node_(226) color "blue"
$ns_ at 0.0 "$node_(226) setdest 852.84 281.42 0"
$ns_ at 0.0 "$node_(226) color blue"
$node_(227) set X_ 801.18
$node_(227) set Y_ 148.83
$node_(227) set Z_ 0
$node_(227) color "blue"
$ns_ at 0.0 "$node_(227) setdest 801.18 148.83 0"
$ns_ at 0.0 "$node_(227) color blue"
$node_(228) set X_ 791.57
$node_(228) set Y_ 90.58
$node_(228) set Z_ 0
$node_(228) color "blue"
$ns_ at 0.0 "$node_(228) setdest 791.57 90.58 0"
$ns_ at 0.0 "$node_(228) color blue"
$node_(229) set X_ 927.74
$node_(229) set Y_ 68.15
$node_(229) set Z_ 0
$node_(229) color "blue"
$ns_ at 0.0 "$node_(229) setdest 927.74 68.15 0"
$ns_ at 0.0 "$node_(229) color blue"
$node_(230) set X_ 940.54
$node_(230) set Y_ 131.95
$node_(230) set Z_ 0
$node_(230) color "blue"
$ns_ at 0.0 "$node_(230) setdest 940.54 131.95 0"
$ns_ at 0.0 "$node_(230) color blue"
$node_(231) set X_ 956.69
$node_(231) set Y_ 250.72
$node_(231) set Z_ 0
$node_(231) color "blue"
$ns_ at 0.0 "$node_(231) setdest 956.69 250.72 0"
$ns_ at 0.0 "$node_(231) color blue"
$node_(232) set X_ 936.62
$node_(232) set Y_ 296.93
$node_(232) set Z_ 0
$node_(232) color "blue"
$ns_ at 0.0 "$node_(232) setdest 936.62 296.93 0"
$ns_ at 0.0 "$node_(232) color blue"
$node_(233) set X_ 992.17
$node_(233) set Y_ 392.86
$node_(233) set Z_ 0
$node_(233) color "blue"
$ns_ at 0.0 "$node_(233) setdest 992.17 392.86 0"
$ns_ at 0.0 "$node_(233) color blue"
$node_(234) set X_ 1012.55
$node_(234) set Y_ 466.66
$node_(234) set Z_ 0
```

```
$node_(234) color "blue"
$ns_ at 0.0 "$node_(234) setdest 1012.55 466.66 0"
$ns_ at 0.0 "$node_(234) color blue"
$node_(235) set X_ 1048.07
$node_(235) set Y_ 617.03
$node_(235) set Z_ 0
$node_(235) color "blue"
$ns_ at 0.0 "$node_(235) setdest 1048.07 617.03 0"
$ns_ at 0.0 "$node_(235) color blue"
$node_(236) set X_ 1026.99
$node_(236) set Y_ 383.40
$node_(236) set Z_ 0
$node_(236) color "blue"
$ns_ at 0.0 "$node_(236) setdest 1026.99 383.40 0"
$ns_ at 0.0 "$node_(236) color blue"
$node_(237) set X_ 990.18
$node_(237) set Y_ 123.80
$node_(237) set Z_ 0
$node_(237) color "blue"
$ns_ at 0.0 "$node_(237) setdest 990.18 123.80 0"
$ns_ at 0.0 "$node_(237) color blue"
$node_(238) set X_ 1124.31
$node_(238) set Y_ 99.17
$node_(238) set Z_ 0
$node_(238) color "blue"
$ns_ at 0.0 "$node_(238) setdest 1124.31 99.17 0"
$ns_ at 0.0 "$node_(238) color blue"
$node_(239) set X_ 1147.10
$node_(239) set Y_ 95.48
$node_(239) set Z_ 0
$node_(239) color "blue"
$ns_ at 0.0 "$node_(239) setdest 1147.10 95.48 0"
$ns_ at 0.0 "$node_(239) color blue"
$node_(240) set X_ 1164.78
$node_(240) set Y_ 92.16
$node_(240) set Z_ 0
$node_(240) color "blue"
$ns_ at 0.0 "$node_(240) setdest 1164.78 92.16 0"
$ns_ at 0.0 "$node_(240) color blue"
$node_(241) set X_ 1185.45
$node_(241) set Y_ 88.65
$node_(241) set Z_ 0
$node_(241) color "blue"
$ns_ at 0.0 "$node_(241) setdest 1185.45 88.65 0"
$ns_ at 0.0 "$node_(241) color blue"
$node_(242) set X_ 1155.78
$node_(242) set Y_ 151.61
$node_(242) set Z_ 0
$node_(242) color "blue"
$ns_ at 0.0 "$node_(242) setdest 1155.78 151.61 0"
$ns_ at 0.0 "$node_(242) color blue"
$node_(243) set X_ 1174.04
$node_(243) set Y_ 148.64
$node_(243) set Z_ 0
```

```
$node_(243) color "blue"
$ns_ at 0.0 "$node_(243) setdest 1174.04 148.64 0"
$ns_ at 0.0 "$node_(243) color blue"
$node_(244) set X_ 1179.76
$node_(244) set Y_ 249.32
$node_(244) set Z_ 0
$node_(244) color "blue"
$ns_ at 0.0 "$node_(244) setdest 1179.76 249.32 0"
$ns_ at 0.0 "$node_(244) color blue"
$node_(245) set X_ 1186.04
$node_(245) set Y_ 284.68
$node_(245) set Z_ 0
$node_(245) color "blue"
$ns_ at 0.0 "$node_(245) setdest 1186.04 284.68 0"
$ns_ at 0.0 "$node_(245) color blue"
$node_(246) set X_ 1191.61
$node_(246) set Y_ 314.45
$node_(246) set Z_ 0
$node_(246) color "blue"
$ns_ at 0.0 "$node_(246) setdest 1191.61 314.45 0"
$ns_ at 0.0 "$node_(246) color blue"
$node_(247) set X_ 1190.05
$node_(247) set Y_ 399.30
$node_(247) set Z_ 0
$node_(247) color "blue"
$ns_ at 0.0 "$node_(247) setdest 1190.05 399.30 0"
$ns_ at 0.0 "$node_(247) color blue"
$node_(248) set X_ 1221.87
$node_(248) set Y_ 519.10
$node_(248) set Z_ 0
$node_(248) color "blue"
$ns_ at 0.0 "$node_(248) setdest 1221.87 519.10 0"
$ns_ at 0.0 "$node_(248) color blue"
$node_(249) set X_ 1213.35
$node_(249) set Y_ 614.62
$node_(249) set Z_ 0
$node_(249) color "blue"
$ns_ at 0.0 "$node_(249) setdest 1213.35 614.62 0"
$ns_ at 0.0 "$node_(249) color blue"
$node_(250) set X_ 1269.38
$node_(250) set Y_ 510.30
$node_(250) set Z_ 0
$node_(250) color "blue"
$ns_ at 0.0 "$node_(250) setdest 1269.38 510.30 0"
$ns_ at 0.0 "$node_(250) color blue"
$node_(251) set X_ 1239.05
$node_(251) set Y_ 376.87
$node_(251) set Z_ 0
$node_(251) color "blue"
$ns_ at 0.0 "$node_(251) setdest 1239.05 376.87 0"
$ns_ at 0.0 "$node_(251) color blue"
$node_(252) set X_ 1243.70
$node_(252) set Y_ 344.33
$node_(252) set Z_ 0
```

```
$node_(252) color "blue"  
$ns_ at 0.0 "$node_(252) setdest 1243.70 344.33 0"  
$ns_ at 0.0 "$node_(252) color blue"  
$node_(253) set X_ 1238.67  
$node_(253) set Y_ 231.58  
$node_(253) set Z_ 0  
$node_(253) color "blue"  
$ns_ at 0.0 "$node_(253) setdest 1238.67 231.58 0"  
$ns_ at 0.0 "$node_(253) color blue"  
$node_(254) set X_ 1227.76  
$node_(254) set Y_ 169.77  
$node_(254) set Z_ 0  
$node_(254) color "blue"  
$ns_ at 0.0 "$node_(254) setdest 1227.76 169.77 0"  
$ns_ at 0.0 "$node_(254) color blue"  
$node_(255) set X_ 1215.13  
$node_(255) set Y_ 82.06  
$node_(255) set Z_ 0  
$node_(255) color "blue"  
$ns_ at 0.0 "$node_(255) setdest 1215.13 82.06 0"  
$ns_ at 0.0 "$node_(255) color blue"  
$node_(256) set X_ 1207.78  
$node_(256) set Y_ 18.23  
$node_(256) set Z_ 0  
$node_(256) color "blue"  
$ns_ at 0.0 "$node_(256) setdest 1207.78 18.23 0"  
$ns_ at 0.0 "$node_(256) color blue"
```


Lampiran 4. Kode program untuk mengirimkan paket data (skenario.tcl)

```
#preset
set val(chan)      Channel/WirelessChannel    ;# channel type
set val(prop)      Propagation/TwoRayGround  ;# radio-propagation model
set val(netif)     Phy/WirelessPhy          ;# network interface type
set val(mac)       Mac/802_11               ;# MAC type
set val(ifq)       Queue/DropTail/PriQueue   ;# interface queue type
set val(ll)        LL                       ;# link layer type
set val(ant)       Antenna/OmniAntenna      ;# antenna model
set val(ifqlen)    170                      ;# max packet in ifq
set val(nn)        257                      ;# number of mobilenodes
set val(rp)        AODV                     ;# routing protocol
set val(x)         1284                     ;# X dimension of topography
set val(y)         979                      ;# Y dimension of topography
set val(stop)     100                      ;# time of simulation end

#simulatornya
set ns_ [new Simulator]
set tracefd [open skenario.tr w]
$ns_ trace-all $tracefd
set nametrace [open skenario.nam w]
$ns_ namtrace-all-wireless $nametrace $val(x) $val(y)

$ns_ use-newtrace

# set up topography object
set topo [new Topography]

$topo load_flatgrid $val(x) $val(y)

#
# Create God
#

create-god $val(nn)

set chan_1_ [new $val(chan)]

    $ns_ node-config -adhocRouting $val(rp) \
                    -llType $val(ll) \
                    -macType $val(mac) \
                    -ifqType $val(ifq) \
                    -ifqLen $val(ifqlen) \
                    -antType $val(ant) \
                    -propType $val(prop) \
                    -phyType $val(netif) \
                    -channelType $val(chan) \
                    -topoInstance $topo \
                    -agentTrace ON \
                    -routerTrace ON \
                    -macTrace ON \
                    -movementTrace ON
```

```

#limiting wifi range
Phy/WirelessPhy set CPTresh_ 10.0
Phy/WirelessPhy set CStresh_ 1.42681e-08 ;#200m
Phy/WirelessPhy set RXThresh_ 1.42681e-08 ;#200m
Phy/WirelessPhy set bandwidth_ 10M
Phy/WirelessPhy set Pt_ 0.281838
Phy/WirelessPhy set freq_ 9.14e+08
Phy/WirelessPhy set L_ 1

#set nodes
for {set i 0} {$i < $val(nn) } { incr i } {
set node_($i) [$ns_ node]}

#initial position
for {set i 0} {$i < $val(nn) } { incr i } {
$ns_ initial_node_pos $node_($i) 20}

# load mobility
source.orig mobility.tcl

#load rsu position
#source.orig rsu.tcl

#sender position
$node_(170) set X_ 3.20
$node_(170) set Y_ 214.10
$node_(170) set Z_ 0
$ns_ at 0.0 "$node_(170) setdest 3.20 214.10 0"
$node_(170) color "red"
$ns_ at 0.0 "$node_(170) color red"

#receiver position
$node_(171) set X_ 1282.00
$node_(171) set Y_ 616.02
$node_(171) set Z_ 0
$ns_ at 0.0 "$node_(171) setdest 1282.00 616.02 0"
$node_(171) color "red"
$ns_ at 0.0 "$node_(171) color red"

# Set a UDP connection
set UDP [new Agent/UDP]
set null [new Agent/Null]
$ns_ attach-agent $node_(170) $UDP
$ns_ attach-agent $node_(171) $null
$ns_ connect $UDP $null
$UDP set fid_ 2

# Set a CBR over UDP
set cbr [new Application/Traffic/CBR]
$cbr attach-agent $UDP
$cbr set type_ cbr
$cbr set packetSize_ 100
$cbr set interval_ 1
$ns_ at 0.0 "$cbr start"

```

```
# Telling nodes when the simulation ends
for {set i 0} {$i < $val(nn)} { incr i } {
  $ns_ at $val(stop) "$node_($i) reset";
}
# ending nam and the simulation
$ns_ at $val(stop) "$ns_ nam-end-wireless $val(stop)"
$ns_ at $val(stop) "stop"

$ns_ at 100.01 "puts \"NS EXITING...\" ; $ns_ halt"
proc stop {} {
  global ns_ tracefd
  $ns_ flush-trace
  close $tracefd
}
puts "Starting Simulation..."
$ns_ run
```