

## Appendix Five

**TABLE of UPD Values for *N*-ary Tree Based Propagation Protocol (NTPP) and the Four Cases of Wheel-Based Propagation Protocol (WPP)**

L	NTPP	WPP							
		Case (i)		Case (ii)		Case (iii)		Case (iv)	
		N	UPD	N	UPD	N	UPD	N	UPD
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	0
4	2	1	5	0	0	0	0	0	0
5	3	2	6	1	5	0	0	0	0
6	4	2	6	2	6	1	5	0	0
7	5	2	6	2	6	2	6	1	5
8	6	2	6	2	6	2	6	2	6
9	7	3	7	2	6	2	6	2	6
10	8	3	7	2	6	2	6	2	6
11	9	3	7	3	7	2	6	2	6
12	10	3	7	3	7	2	6	2	6
13	11	4	8	3	7	3	7	2	6
14	12	4	8	3	7	3	7	2	6
15	13	4	8	3	7	3	7	3	7
16	14	4	8	4	8	3	7	3	7
17	15	5	9	4	8	3	7	3	7
18	16	5	9	4	8	3	7	3	7
19	17	5	9	4	8	4	8	3	7
20	18	5	9	4	8	4	8	3	7
21	19	6	10	5	9	4	8	3	7
22	20	6	10	5	9	4	8	4	8
23	21	6	10	5	9	4	8	4	8
24	22	6	10	5	9	4	8	4	8
25	23	7	11	5	9	5	9	4	8
26	24	7	11	6	10	5	9	4	8
27	25	7	11	6	10	5	9	4	8
28	26	7	11	6	10	5	9	4	8
29	27	8	12	6	10	5	9	5	9
30	28	8	12	6	10	5	9	5	9
31	29	8	12	7	11	6	10	5	9
32	30	8	12	7	11	6	10	5	9
33	31	9	13	7	11	6	10	5	9
34	32	9	13	7	11	6	10	5	9
35	33	9	13	7	11	6	10	5	9
36	34	9	13	8	12	6	10	6	10
37	35	10	14	8	12	7	11	6	10
38	36	10	14	8	12	7	11	6	10
39	37	10	14	8	12	7	11	6	10
40	38	10	14	8	12	7	11	6	10
41	39	11	15	9	13	7	11	6	10

42	40	11	15	9	13	7	11	6	10
43	41	11	15	9	13	8	12	7	11
44	42	11	15	9	13	8	12	7	11
45	43	12	16	9	13	8	12	7	11
46	44	12	16	10	14	8	12	7	11
47	45	12	16	10	14	8	12	7	11
48	46	12	16	10	14	8	12	7	11
49	47	13	17	10	14	9	13	7	11
50	48	13	17	10	14	9	13	8	12

N: Number of Wheels

L: Number of Levels