

**Supplementary Material**

**Table S1.** Experimentation percentages using adaptive weight function (assuming uniformly distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean Sample Size	Mean DLTs (%)
		0-14	15-24	25-34	35-45	46+		
<i>Scenario A</i>								
0.5	PIPE	20	63	17	-	-	40.0	19
	TITE-PIPE-C	21	63	16	-	-	40.0	19
	TITE-PIPE-O	23	63	15	-	-	39.9	19
1	PIPE	20	63	17	-	-	40.0	19
	TITE-PIPE-C	22	62	15	-	-	39.9	19
	TITE-PIPE-O	26	61	12	-	-	39.9	18
2	PIPE	20	63	17	-	-	40.0	19
	TITE-PIPE-C	27	60	13	-	-	39.9	18
	TITE-PIPE-O	34	58	8	-	-	39.8	17
<i>Scenario B</i>								
0.5	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	77	23	-	-	-	40.0	11
	TITE-PIPE-O	79	21	-	-	-	40.0	11
1	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	79	21	-	-	-	40.0	11
	TITE-PIPE-O	83	17	-	-	-	40.0	11
2	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	83	17	-	-	-	40.0	11
	TITE-PIPE-O	90	10	-	-	-	40.0	10
<i>Scenario C</i>								
0.5	PIPE	14	15	27	33	11	39.5	31
	TITE-PIPE-C	14	15	27	33	10	39.4	31
	TITE-PIPE-O	14	15	28	33	10	39.0	31
1	PIPE	14	15	27	33	11	39.5	31
	TITE-PIPE-C	15	16	27	32	10	39.4	31
	TITE-PIPE-O	15	16	28	31	8	38.9	30
2	PIPE	14	15	27	33	11	39.5	31
	TITE-PIPE-C	18	16	27	29	9	39.3	30
	TITE-PIPE-O	18	18	29	28	6	38.7	29
<i>Scenario D</i>								
0.5	PIPE	-	-	-	57	43	19.4	61
	TITE-PIPE-C	-	-	-	60	40	19.4	61
	TITE-PIPE-O	-	-	-	61	39	19.2	61
1	PIPE	-	-	-	57	43	19.4	61
	TITE-PIPE-C	-	-	-	63	37	19.5	61
	TITE-PIPE-O	-	-	-	64	36	19.1	61
2	PIPE	-	-	-	57	43	19.4	61
	TITE-PIPE-C	-	-	-	66	34	19.4	61
	TITE-PIPE-O	-	-	-	68	32	18.9	61
<i>Scenario E</i>								
0.5	PIPE	30	31	39	1	-	39.8	21
	TITE-PIPE-C	30	31	39	1	-	39.8	21
	TITE-PIPE-O	32	31	37	0	-	39.7	21
1	PIPE	30	31	39	1	-	39.8	21
	TITE-PIPE-C	31	31	38	0	-	39.8	21
	TITE-PIPE-O	33	31	35	0	-	39.7	20
2	PIPE	30	31	39	1	-	39.8	21
	TITE-PIPE-C	33	30	36	0	-	39.7	20
	TITE-PIPE-O	37	32	31	0	-	39.6	19
<i>Scenario F</i>								
0.5	PIPE	20	55	-	14	11	39.5	25
	TITE-PIPE-C	21	53	-	14	11	39.4	25
	TITE-PIPE-O	22	53	-	14	10	39.3	25
1	PIPE	20	55	-	14	11	39.5	25
	TITE-PIPE-C	23	52	-	15	11	39.4	25
	TITE-PIPE-O	25	52	-	14	9	39.3	24
2	PIPE	20	55	-	14	11	39.5	25
	TITE-PIPE-C	27	48	-	14	10	39.4	24
	TITE-PIPE-O	31	48	-	14	6	39.1	23
<i>Scenario G</i>								
0.5	PIPE	38	35	21	3	3	40.0	17
	TITE-PIPE-C	40	35	20	3	2	40.0	17
	TITE-PIPE-O	42	34	19	3	2	40.0	17
1	PIPE	38	35	21	3	3	40.0	17
	TITE-PIPE-C	41	34	19	3	2	40.0	17
	TITE-PIPE-O	45	32	18	3	2	40.0	16
2	PIPE	38	35	21	3	3	40.0	17
	TITE-PIPE-C	46	33	17	3	2	40.0	16
	TITE-PIPE-O	52	30	15	2	1	40.0	14

**Table S2.** Recommendation percentages using adaptive weight function (assuming uniformly distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean No. MTDCs	Trials with no MTDC (%)	Trials that stopped early (%)
		0-14	15-24	25-34	35-45	46+			
<i>Scenario A</i>									
0.5	PIPE	12	73	15	-	-	2.3	0.2	0.2
	TITE-PIPE-C	11	74	14	-	-	2.2	0.2	0.2
	TITE-PIPE-O	11	75	14	-	-	2.2	0.2	0.2
1	PIPE	12	73	15	-	-	2.3	0.2	0.2
	TITE-PIPE-C	11	74	14	-	-	2.2	0.3	0.3
	TITE-PIPE-O	12	75	14	-	-	2.2	0.4	0.3
2	PIPE	12	73	15	-	-	2.3	0.2	0.2
	TITE-PIPE-C	12	74	14	-	-	2.2	0.5	0.4
	TITE-PIPE-O	12	76	12	-	-	2.2	0.9	0.8
<i>Scenario B</i>									
0.5	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	73	27	-	-	-	1.9	0	0
	TITE-PIPE-O	73	27	-	-	-	1.9	0.1	0.1
1	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	74	26	-	-	-	1.9	0	0
	TITE-PIPE-O	76	24	-	-	-	2.0	0	0
2	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	77	23	-	-	-	2.0	0	0
	TITE-PIPE-O	82	18	-	-	-	2.1	0	0
<i>Scenario C</i>									
0.5	PIPE	16	24	35	19	1	1.3	4.5	2.1
	TITE-PIPE-C	16	24	34	20	1	1.3	4.9	2.8
	TITE-PIPE-O	15	22	34	20	2	1.3	6.8	4.5
1	PIPE	16	24	35	19	1	1.3	4.5	2.1
	TITE-PIPE-C	14	24	35	20	2	1.3	5.4	3.1
	TITE-PIPE-O	14	22	34	21	1	1.3	8.0	5.3
2	PIPE	16	24	35	19	1	1.3	4.5	2.1
	TITE-PIPE-C	13	23	33	22	2	1.2	7.3	3.8
	TITE-PIPE-O	13	23	32	22	2	1.2	8.8	5.8
<i>Scenario D</i>									
0.5	PIPE	-	-	-	3	2	0	95.8	87.2
	TITE-PIPE-C	-	-	-	2	1	0	96.3	87.5
	TITE-PIPE-O	-	-	-	2	2	0	96.2	88.0
1	PIPE	-	-	-	3	2	0	95.8	87.2
	TITE-PIPE-C	-	-	-	2	1	0	96.2	87.0
	TITE-PIPE-O	-	-	-	2	2	0	96.8	87.8
2	PIPE	-	-	-	3	2	0	95.8	87.2
	TITE-PIPE-C	-	-	-	2	2	0	96.4	86.7
	TITE-PIPE-O	-	-	-	2	1	0	97.2	87.7
<i>Scenario E</i>									
0.5	PIPE	30	32	37	0	-	2	0.9	0.7
	TITE-PIPE-C	30	32	37	0	-	2	0.9	0.8
	TITE-PIPE-O	30	32	37	0	-	2	1.1	1.0
1	PIPE	30	32	37	0	-	2	0.9	0.7
	TITE-PIPE-C	30	31	38	0	-	2	0.8	0.6
	TITE-PIPE-O	30	33	36	0	-	2	1.2	1.1
2	PIPE	30	32	37	0	-	2	0.9	0.7
	TITE-PIPE-C	30	32	37	0	-	2	1.2	1.1
	TITE-PIPE-O	32	33	33	0	-	2	1.7	1.8
<i>Scenario F</i>									
0.5	PIPE	13	70	-	11	4	1.7	2.1	1.6
	TITE-PIPE-C	12	71	-	11	4	1.7	2.0	1.6
	TITE-PIPE-O	12	70	-	11	4	1.7	2.8	2.6
1	PIPE	13	70	-	11	4	1.7	2.1	1.6
	TITE-PIPE-C	12	71	-	10	4	1.7	2.7	1.9
	TITE-PIPE-O	12	71	-	10	4	1.7	3.2	2.7
2	PIPE	13	70	-	11	4	1.7	2.1	1.6
	TITE-PIPE-C	12	70	-	11	4	1.7	3.3	2.0
	TITE-PIPE-O	12	70	-	10	3	1.6	5.2	3.6
<i>Scenario G</i>									
0.5	PIPE	44	38	17	1	0	2.7	0	0
	TITE-PIPE-C	45	37	17	1	0	2.7	0	0
	TITE-PIPE-O	44	37	17	1	0	2.7	0.2	0.2
1	PIPE	44	38	17	1	0	2.7	0	0
	TITE-PIPE-C	45	37	17	1	0	2.7	0	0
	TITE-PIPE-O	44	36	18	1	0	2.7	0	0
2	PIPE	44	38	17	1	0	2.7	0	0
	TITE-PIPE-C	44	36	18	1	1	2.7	0	0
	TITE-PIPE-O	44	38	17	1	1	2.7	0	0.2

**Table S3.** Experimentation percentages using uniform weight function (assuming Pareto distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean Sample Size	Mean DLTs (%)
		0-14	15-24	25-34	35-45	46+		
<i>Scenario A</i>								
0.5	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	21	62	16	-	-	39.9	19
	TITE-PIPE-O	24	62	14	-	-	39.9	19
1	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	23	62	15	-	-	39.9	19
	TITE-PIPE-O	27	61	12	-	-	39.9	18
2	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	27	60	13	-	-	39.9	18
	TITE-PIPE-O	35	58	7	-	-	39.9	17
<i>Scenario B</i>								
0.5	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	77	23	-	-	-	40.0	11
	TITE-PIPE-O	80	20	-	-	-	40.0	11
1	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	79	21	-	-	-	40.0	11
	TITE-PIPE-O	84	16	-	-	-	40.0	11
2	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	84	16	-	-	-	40.0	11
	TITE-PIPE-O	91	9	-	-	-	40.0	10
<i>Scenario C</i>								
0.5	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	15	16	27	32	10	39.4	31
	TITE-PIPE-O	14	16	28	32	9	39.2	31
1	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	15	16	27	31	10	39.4	31
	TITE-PIPE-O	16	17	29	31	8	39.2	30
2	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	19	16	27	29	9	39.3	30
	TITE-PIPE-O	19	18	29	28	6	39.2	28
<i>Scenario D</i>								
0.5	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	61	39	19.6	60
	TITE-PIPE-O	-	-	-	62	38	19.4	60
1	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	64	36	19.6	60
	TITE-PIPE-O	-	-	-	65	35	19.2	60
2	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	67	33	19.4	60
	TITE-PIPE-O	-	-	-	69	31	18.8	60
<i>Scenario E</i>								
0.5	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	30	31	38	0	-	39.8	21
	TITE-PIPE-O	32	31	37	0	-	39.7	21
1	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	31	31	38	0	-	39.8	21
	TITE-PIPE-O	34	31	34	0	-	39.7	20
2	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	33	31	36	0	-	39.8	20
	TITE-PIPE-O	38	32	30	0	-	39.6	19
<i>Scenario F</i>								
0.5	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	22	53	-	14	11	39.6	25
	TITE-PIPE-O	23	54	-	14	10	39.5	25
1	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	24	52	-	14	10	39.5	25
	TITE-PIPE-O	26	52	-	14	9	39.5	24
2	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	28	48	-	14	10	39.5	24
	TITE-PIPE-O	32	49	-	14	6	39.5	23
<i>Scenario G</i>								
0.5	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	40	35	20	3	2	40.0	17
	TITE-PIPE-O	42	34	19	3	2	40.0	17
1	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	41	35	19	3	2	40.0	17
	TITE-PIPE-O	45	33	17	2	2	40.0	16
2	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	46	33	17	2	2	40.0	15
	TITE-PIPE-O	53	30	14	2	1	40.0	14

**Table S4.** Recommendation percentages using uniform weight function (assuming Pareto distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean No. MTDCs	Trials with no MTDC (%)	Trials that stopped early (%)
		0-14	15-24	25-34	35-45	46+			
<i>Scenario A</i>									
0.5	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	75	14	-	-	2.3	0.2	0.2
	TITE-PIPE-O	12	75	13	-	-	2.2	0.2	0.2
1	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	75	14	-	-	2.2	0.3	0.2
	TITE-PIPE-O	12	74	14	-	-	2.2	0.4	0.4
2	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	74	14	-	-	2.2	0.6	0.3
	TITE-PIPE-O	13	76	11	-	-	2.2	0.8	0.4
<i>Scenario B</i>									
0.5	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	73	27	-	-	-	1.9	0	0
	TITE-PIPE-O	74	26	-	-	-	1.9	0	0
1	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	75	25	-	-	-	1.9	0	0
	TITE-PIPE-O	77	23	-	-	-	2.0	0	0
2	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	78	22	-	-	-	2.0	0	0
	TITE-PIPE-O	82	17	-	-	-	2.1	0.1	0
<i>Scenario C</i>									
0.5	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	14	24	35	20	1	1.3	5.8	3.0
	TITE-PIPE-O	14	24	33	21	1	1.3	6.8	3.9
1	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	14	24	34	21	1	1.3	5.5	3.2
	TITE-PIPE-O	16	22	33	20	2	1.3	6.7	3.8
2	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	13	22	34	23	2	1.3	7.0	3.9
	TITE-PIPE-O	14	21	33	21	3	1.2	7.8	4.2
<i>Scenario D</i>									
0.5	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	96.4	88.0
	TITE-PIPE-O	-	-	-	2	1	0	96.6	88.0
1	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	96.6	87.2
	TITE-PIPE-O	-	-	-	1	1	0	97.2	87.8
2	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	97.2	88.2
	TITE-PIPE-O	-	-	-	2	1	0	97.7	89.1
<i>Scenario E</i>									
0.5	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	37	0	-	2.1	0.8	0.8
	TITE-PIPE-O	31	32	36	0	-	2.0	1.2	1.1
1	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	37	0	-	2.0	1.1	0.9
	TITE-PIPE-O	31	32	35	0	-	2.0	1.6	1.2
2	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	37	0	-	2.0	1.2	0.9
	TITE-PIPE-O	32	33	33	0	-	2.0	2.5	1.8
<i>Scenario F</i>									
0.5	PIPE	12	72	-	10	4	1.7	1.8	1.3
	TITE-PIPE-C	12	72	-	10	4	1.7	2.1	1.4
	TITE-PIPE-O	12	71	-	11	3	1.7	2.9	1.9
1	PIPE	12	72	-	10	4	1.7	1.8	1.3
	TITE-PIPE-C	12	72	-	10	3	1.7	2.5	1.8
	TITE-PIPE-O	13	70	-	10	5	1.7	2.5	1.6
2	PIPE	12	72	-	10	4	1.7	1.8	1.4
	TITE-PIPE-C	12	71	-	9	3	1.7	3.7	2.1
	TITE-PIPE-O	13	69	-	10	4	1.6	4.3	2.0
<i>Scenario G</i>									
0.5	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	45	37	17	1	1	2.7	0	0
	TITE-PIPE-O	44	37	17	1	1	2.7	0	0
1	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	44	38	17	1	0	2.7	0	0
	TITE-PIPE-O	44	37	17	1	1	2.7	0	0
2	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	44	36	18	1	0	2.7	0	0
	TITE-PIPE-O	46	36	16	1	1	2.7	0	0

**Table S5.** Experimentation percentages using adaptive weight function (assuming Pareto distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean Sample Size	Mean DLTs (%)
		0-14	15-24	25-34	35-45	46+		
<i>Scenario A</i>								
0.5	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	21	62	16	-	-	39.9	19
	TITE-PIPE-O	23	62	15	-	-	39.9	19
1	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	23	62	15	-	-	39.9	19
	TITE-PIPE-O	27	61	12	-	-	39.9	18
2	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	27	60	13	-	-	39.9	18
	TITE-PIPE-O	34	58	8	-	-	39.9	17
<i>Scenario B</i>								
0.5	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	77	23	-	-	-	40.0	11
	TITE-PIPE-O	80	20	-	-	-	40.0	11
1	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	78	22	-	-	-	40.0	11
	TITE-PIPE-O	84	16	-	-	-	40.0	11
2	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	83	17	-	-	-	40.0	11
	TITE-PIPE-O	91	9	-	-	-	40.0	10
<i>Scenario C</i>								
0.5	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	14	16	28	32	10	39.4	31
	TITE-PIPE-O	14	16	28	32	9	39.1	31
1	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	15	16	27	31	10	39.4	31
	TITE-PIPE-O	16	16	28	31	8	38.9	30
2	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	18	16	27	29	10	39.3	30
	TITE-PIPE-O	19	18	29	29	6	38.9	29
<i>Scenario D</i>								
0.5	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	61	39	19.5	61
	TITE-PIPE-O	-	-	-	61	39	19.4	60
1	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	63	37	19.5	60
	TITE-PIPE-O	-	-	-	64	36	19.2	60
2	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	67	33	19.3	60
	TITE-PIPE-O	-	-	-	68	32	18.7	60
<i>Scenario E</i>								
0.5	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	31	31	38	0	-	39.8	21
	TITE-PIPE-O	32	31	37	0	-	39.7	21
1	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	31	31	38	0	-	39.8	21
	TITE-PIPE-O	34	31	35	0	-	39.7	20
2	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	33	31	36	0	-	39.8	20
	TITE-PIPE-O	38	32	30	0	-	39.5	19
<i>Scenario F</i>								
0.5	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	22	53	-	14	11	39.6	25
	TITE-PIPE-O	22	54	-	14	10	39.5	24
1	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	24	52	-	14	10	39.5	25
	TITE-PIPE-O	25	52	-	14	9	39.4	24
2	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	28	48	-	14	10	39.5	24
	TITE-PIPE-O	31	49	-	14	6	39.3	23
<i>Scenario G</i>								
0.5	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	40	35	20	3	3	40.0	17
	TITE-PIPE-O	41	34	19	3	2	40.0	17
1	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	42	34	19	3	2	40.0	17
	TITE-PIPE-O	46	33	17	2	2	40.0	16
2	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	46	33	17	2	2	40.0	16
	TITE-PIPE-O	53	30	14	2	1	40.0	14

**Table S6.** Recommendation percentages using adaptive weight function (assuming Pareto distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean No. MTDCs	Trials with no MTDC (%)	Trials that stopped early (%)
		0-14	15-24	25-34	35-45	46+			
<i>Scenario A</i>									
0.5	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-O	12	74	14	-	-	2.2	0.3	0.2
1	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-O	12	74	14	-	-	2.2	0.5	0.4
2	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	74	14	-	-	2.2	0.5	0.3
	TITE-PIPE-O	12	76	11	-	-	2.2	0.4	0.5
<i>Scenario B</i>									
0.5	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	74	26	-	-	-	1.9	0	0
	TITE-PIPE-O	75	25	-	-	-	1.9	0	0
1	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	75	25	-	-	-	1.9	0	0
	TITE-PIPE-O	77	23	-	-	-	2.0	0	0
2	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	77	23	-	-	-	2.0	0	0
	TITE-PIPE-O	82	18	-	-	-	2.1	0.1	0
<i>Scenario C</i>									
0.5	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	14	24	35	20	1	1.3	5.5	3.0
	TITE-PIPE-O	15	24	33	21	1	1.3	6.5	4.0
1	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	14	24	34	21	1	1.3	5.4	3.1
	TITE-PIPE-O	15	22	33	21	2	1.3	7.2	4.8
2	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	13	23	34	21	2	1.3	6.9	4.0
	TITE-PIPE-O	14	22	31	22	3	1.2	8.2	5.0
<i>Scenario D</i>									
0.5	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	96.5	88.0
	TITE-PIPE-O	-	-	-	3	1	0	96.5	87.9
1	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	96.5	87.5
	TITE-PIPE-O	-	-	-	2	1	0	97.0	88.3
2	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	96.8	88.2
	TITE-PIPE-O	-	-	-	2	1	0	97.5	89.2
<i>Scenario E</i>									
0.5	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	37	0	-	2.0	1.0	0.8
	TITE-PIPE-O	31	32	35	0	-	2.0	1.3	1.1
1	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	36	0	-	2.1	1.1	0.9
	TITE-PIPE-O	31	31	36	0	-	2.0	1.8	1.6
2	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	37	0	-	2.0	1.4	0.9
	TITE-PIPE-O	32	32	33	0	-	2.0	2.5	2.4
<i>Scenario F</i>									
0.5	PIPE	12	72	-	10	4	1.7	1.8	1.3
	TITE-PIPE-C	12	72	-	10	3	1.7	2.1	1.4
	TITE-PIPE-O	13	71	-	11	3	1.7	2.8	1.9
1	PIPE	12	72	-	10	4	1.7	1.8	1.3
	TITE-PIPE-C	13	72	-	10	3	1.7	2.6	1.9
	TITE-PIPE-O	12	71	-	11	4	1.7	2.8	1.9
2	PIPE	12	72	-	10	4	1.7	1.8	1.4
	TITE-PIPE-C	12	71	-	10	4	1.7	3.8	2.2
	TITE-PIPE-O	12	70	-	10	4	1.6	4.0	2.5
<i>Scenario G</i>									
0.5	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	45	37	17	1	1	2.7	0	0
	TITE-PIPE-O	44	36	18	1	1	2.7	0	0
1	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	44	38	17	1	1	2.7	0	0
	TITE-PIPE-O	45	36	17	1	1	2.7	0	0
2	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	44	36	18	1	0	2.7	0	0
	TITE-PIPE-O	45	36	17	1	1	2.7	0.1	0.2

**Table S7.** Mean trial durations (in time units) per design and scenario, with percentage change from PIPE (in parentheses) using uniform and adaptive weight functions (assuming Pareto distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Scenario						
		A	B	C	D	E	F	G
<b>Uniform</b>								
0.5	PIPE	79.3 (-)	79.5 (-)	78.3 (-)	39.1 (-)	79.1 (-)	78.6 (-)	79.5 (-)
	TITE-PIPE-C	79 (0)	79.1 (-1)	77.9 (0)	39.3 (0)	78.7 (0)	78.3 (0)	79.1 (0)
	TITE-PIPE-O	79.0 (0)	79.1 (-1)	77.5 (-1)	38.9 (0)	78.6 (-1)	78.0 (-1)	79.1 (0)
1	PIPE	41.7 (-)	42.2 (-)	41.0 (-)	20.1 (-)	41.6 (-)	41.4 (-)	41.9 (0)
	TITE-PIPE-C	40.0 (-4)	40.1 (-5)	39.4 (-4)	19.8 (-2)	39.8 (-4)	39.6 (-4)	40.0 (-5)
	TITE-PIPE-O	39.9 (-4)	40.0 (-5)	39.2 (-5)	19.4 (-3)	39.7 (-4)	39.6 (-4)	40.0 (-5)
2	PIPE	29.7 (-)	30.7 (-)	28.9 (-)	13.4 (-)	29.6 (-)	29.5 (-)	30.0 (-)
	TITE-PIPE-C	20.5 (-31)	20.6 (-33)	20.2 (-30)	10.3 (-23)	20.5 (-31)	20.3 (-31)	20.5 (-31)
	TITE-PIPE-O	20.4 (-31)	20.5 (-33)	20.1 (-30)	9.9 (-26)	20.3 (-31)	20.2 (-31)	20.5 (-32)
<b>Adaptive</b>								
0.5	PIPE	79.3 (-)	79.5 (-)	78.3 (-)	39.1 (-)	79.1 (-)	78.6 (-)	79.5 (-)
	TITE-PIPE-C	79.0 (0)	79.1 (-1)	77.9 (0)	39.1 (0)	78.7 (0)	78.2 (-1)	79.1 (0)
	TITE-PIPE-O	78.9 (-1)	79.1 (-1)	77.4 (-1)	38.9 (0)	78.6 (-1)	78.0 (-1)	79.1 (0)
1	PIPE	41.7 (-)	42.2 (-)	41.0 (-)	20.1 (-)	41.6 (-)	41.4 (-)	41.9 (0)
	TITE-PIPE-C	40.0 (-4)	40.0 (-5)	39.4 (-4)	19.7 (-2)	39.8 (-4)	39.5 (-5)	40.0 (-5)
	TITE-PIPE-O	39.9 (-4)	40.0 (-5)	38.9 (-5)	19.4 (-4)	39.7 (-5)	39.5 (-5)	40.0 (-5)
2	PIPE	29.7 (-)	30.7 (-)	28.9 (-)	13.4 (-)	29.6 (-)	29.5 (-)	30.0 (-)
	TITE-PIPE-C	20.5 (-31)	20.6 (-33)	20.2 (-30)	10.2 (-24)	20.5 (-31)	20.3 (-31)	20.5 (-31)
	TITE-PIPE-O	20.4 (-31)	20.5 (-33)	19.9 (-31)	9.8 (-27)	20.2 (-32)	20.2 (-32)	20.5 (-32)

**Table S8.** Experimentation percentages using uniform weight function (assuming Weibull distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean Sample Size	Mean DLTs (%)
		0-14	15-24	25-34	35-45	46+		
<i>Scenario A</i>								
0.5	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	21	62	16	-	-	39.9	19
	TITE-PIPE-O	23	62	15	-	-	39.9	19
1	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	23	62	15	-	-	39.9	19
	TITE-PIPE-O	26	61	13	-	-	39.9	18
2	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	27	60	13	-	-	39.9	18
	TITE-PIPE-O	34	58	8	-	-	39.9	17
<i>Scenario B</i>								
0.5	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	77	23	-	-	-	40.0	11
	TITE-PIPE-O	79	21	-	-	-	40.0	11
1	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	78	22	-	-	-	40.0	11
	TITE-PIPE-O	83	17	-	-	-	40.0	11
2	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	83	17	-	-	-	40.0	11
	TITE-PIPE-O	90	10	-	-	-	40.0	10
<i>Scenario C</i>								
0.5	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	14	16	27	32	10	39.4	31
	TITE-PIPE-O	14	16	28	33	10	38.9	31
1	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	15	16	28	32	10	39.4	31
	TITE-PIPE-O	15	16	28	31	9	38.8	31
2	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	18	16	27	29	10	39.3	30
	TITE-PIPE-O	18	17	29	29	7	38.8	29
<i>Scenario D</i>								
0.5	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	61	39	19.9	60
	TITE-PIPE-O	-	-	-	61	39	19.6	60
1	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	63	37	20.0	60
	TITE-PIPE-O	-	-	-	65	35	19.6	60
2	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	67	33	19.9	60
	TITE-PIPE-O	-	-	-	69	31	19.5	60
<i>Scenario E</i>								
0.5	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	30	31	38	0	-	39.8	21
	TITE-PIPE-O	32	31	37	0	-	39.7	21
1	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	31	31	38	0	-	39.8	21
	TITE-PIPE-O	34	31	35	0	-	39.7	20
2	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	33	31	37	0	-	39.8	20
	TITE-PIPE-O	37	32	31	0	-	39.5	20
<i>Scenario F</i>								
0.5	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	22	54	-	14	11	39.6	25
	TITE-PIPE-O	22	53	-	14	10	39.4	25
1	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	23	52	-	14	10	39.5	25
	TITE-PIPE-O	25	52	-	14	9	39.4	24
2	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	28	48	-	14	10	39.5	24
	TITE-PIPE-O	31	49	-	14	7	39.2	23
<i>Scenario G</i>								
0.5	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	40	35	20	3	3	40.0	17
	TITE-PIPE-O	41	34	19	3	2	40.0	17
1	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	41	35	19	3	2	40.0	17
	TITE-PIPE-O	45	33	18	3	2	40.0	16
2	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	45	33	17	2	2	40.0	16
	TITE-PIPE-O	52	30	15	2	2	40.0	14

**Table S9.** Recommendation percentages using uniform weight function (assuming Weibull distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean No. MTDCs	Trials with no MTDC (%)	Trials that stopped early (%)
		0-14	15-24	25-34	35-45	46+			
<i>Scenario A</i>									
0.5	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-O	11	75	13	-	-	2.2	0.4	0.2
1	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	75	14	-	-	2.2	0.4	0.2
	TITE-PIPE-O	11	74	15	-	-	2.2	0.5	0.5
2	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	75	14	-	-	2.2	0.5	0.4
	TITE-PIPE-O	12	75	12	-	-	2.2	0.9	0.6
<i>Scenario B</i>									
0.5	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	73	27	-	-	-	1.9	0	0
	TITE-PIPE-O	74	26	-	-	-	1.9	0	0
1	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	74	26	-	-	-	1.9	0	0
	TITE-PIPE-O	76	24	-	-	-	2.0	0	0
2	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	77	23	-	-	-	2.0	0	0
	TITE-PIPE-O	81	19	-	-	-	2.1	0	0
<i>Scenario C</i>									
0.5	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	14	23	34	21	1	1.3	5.4	2.8
	TITE-PIPE-O	13	23	34	22	1	1.3	7.5	5.0
1	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	14	23	35	21	2	1.3	5.4	2.8
	TITE-PIPE-O	14	22	34	20	2	1.2	8.1	5.3
2	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	13	21	35	22	2	1.3	6.9	3.8
	TITE-PIPE-O	13	22	32	22	2	1.2	9.0	5.9
<i>Scenario D</i>									
0.5	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	96.3	87.0
	TITE-PIPE-O	-	-	-	2	1	0	96.4	87.2
1	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	2	0	96.2	86.3
	TITE-PIPE-O	-	-	-	2	1	0	97.0	87.7
2	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	96.9	87.6
	TITE-PIPE-O	-	-	-	2	1	0	97.2	88.3
<i>Scenario E</i>									
0.5	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	29	32	38	0	-	2.1	1.1	1.0
	TITE-PIPE-O	30	32	36	0	-	2.0	1.4	1.1
1	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	37	0	-	2.0	1.1	0.9
	TITE-PIPE-O	31	32	36	0	-	2.0	1.5	1.2
2	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	37	0	-	2.0	1.2	0.9
	TITE-PIPE-O	31	32	34	0	-	1.9	2.4	2.1
<i>Scenario F</i>									
0.5	PIPE	12	72	-	10	4	1.7	1.8	1.3
	TITE-PIPE-C	12	72	-	10	4	1.7	2.1	1.4
	TITE-PIPE-O	12	71	-	10	4	1.7	3.1	2.2
1	PIPE	12	72	-	10	4	1.7	1.8	1.3
	TITE-PIPE-C	12	72	-	10	3	1.7	2.5	1.8
	TITE-PIPE-O	12	70	-	10	5	1.7	2.9	2.2
2	PIPE	12	72	-	10	4	1.7	1.8	1.4
	TITE-PIPE-C	12	72	-	9	4	1.7	3.4	1.9
	TITE-PIPE-O	12	69	-	10	4	1.6	5.1	3.2
<i>Scenario G</i>									
0.5	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	44	38	17	1	1	2.7	0	0
	TITE-PIPE-O	44	37	17	1	1	2.7	0	0
1	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	44	38	17	1	0	2.7	0	0
	TITE-PIPE-O	44	37	18	1	1	2.7	0	0
2	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	44	36	18	1	0	2.7	0	0
	TITE-PIPE-O	45	36	17	1	1	2.7	0	0

**Table S10.** Experimentation percentages using adaptive weight function (assuming Weibull distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean Sample Size	Mean DLTs (%)
		0-14	15-24	25-34	35-45	46+		
<i>Scenario A</i>								
0.5	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	22	62	16	-	-	39.9	19
	TITE-PIPE-O	25	61	14	-	-	39.9	19
1	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	24	61	15	-	-	39.9	19
	TITE-PIPE-O	29	60	11	-	-	39.9	18
2	PIPE	20	63	17	-	-	40.0	20
	TITE-PIPE-C	29	59	12	-	-	39.9	18
	TITE-PIPE-O	39	55	6	-	-	39.9	16
<i>Scenario B</i>								
0.5	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	78	22	-	-	-	40.0	11
	TITE-PIPE-O	80	20	-	-	-	40.0	11
1	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	80	20	-	-	-	40.0	11
	TITE-PIPE-O	86	14	-	-	-	40.0	11
2	PIPE	76	24	-	-	-	40.0	12
	TITE-PIPE-C	85	15	-	-	-	40.0	11
	TITE-PIPE-O	93	7	-	-	-	40.0	10
<i>Scenario C</i>								
0.5	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	15	16	28	32	10	39.3	31
	TITE-PIPE-O	15	16	28	31	9	39.0	31
1	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	17	16	27	30	10	39.3	30
	TITE-PIPE-O	17	17	28	29	8	39.0	29
2	PIPE	14	15	28	33	11	39.4	32
	TITE-PIPE-C	21	16	26	28	9	39.3	29
	TITE-PIPE-O	22	19	28	26	5	39.0	27
<i>Scenario D</i>								
0.5	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	62	38	19.5	60
	TITE-PIPE-O	-	-	-	62	38	19.3	60
1	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	64	36	19.4	60
	TITE-PIPE-O	-	-	-	66	34	19.0	60
2	PIPE	-	-	-	58	42	19.5	61
	TITE-PIPE-C	-	-	-	68	32	19.4	60
	TITE-PIPE-O	-	-	-	71	29	18.9	60
<i>Scenario E</i>								
0.5	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	31	31	38	0	-	39.8	21
	TITE-PIPE-O	33	31	36	0	-	39.7	21
1	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	32	31	37	0	-	39.8	21
	TITE-PIPE-O	35	31	34	0	-	39.6	20
2	PIPE	30	31	38	1	-	39.8	21
	TITE-PIPE-C	34	30	36	0	-	39.8	20
	TITE-PIPE-O	39	32	28	0	-	39.6	19
<i>Scenario F</i>								
0.5	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	23	53	-	14	11	39.5	25
	TITE-PIPE-O	24	52	-	14	10	39.4	24
1	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	25	50	-	14	10	39.5	25
	TITE-PIPE-O	28	50	-	14	8	39.4	24
2	PIPE	21	55	-	14	11	39.6	25
	TITE-PIPE-C	30	46	-	14	10	39.5	24
	TITE-PIPE-O	35	46	-	14	5	39.3	22
<i>Scenario G</i>								
0.5	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	41	35	19	3	2	40.0	17
	TITE-PIPE-O	43	34	18	3	2	40.0	16
1	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	43	34	18	3	2	40.0	16
	TITE-PIPE-O	48	32	17	2	2	40.0	15
2	PIPE	38	35	20	3	3	40.0	17
	TITE-PIPE-C	48	32	16	2	2	40.0	15
	TITE-PIPE-O	56	28	13	1	1	40.0	13

**Table S11.** Recommendation percentages using adaptive weight function (assuming Weibull distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Probability of DLT (%)					Mean No. MTDCs	Trials with no MTDC (%)	Trials that stopped early (%)
		0-14	15-24	25-34	35-45	46+			
<i>Scenario A</i>									
0.5	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	10	74	15	-	-	2.2	0.4	0.3
	TITE-PIPE-O	11	74	14	-	-	2.2	0.5	0.4
1	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	11	75	14	-	-	2.2	0.4	0.3
	TITE-PIPE-O	12	75	13	-	-	2.2	0.4	0.4
2	PIPE	11	75	14	-	-	2.2	0.2	0.2
	TITE-PIPE-C	12	74	14	-	-	2.2	0.6	0.4
	TITE-PIPE-O	14	75	10	-	-	2.2	0.8	0.5
<i>Scenario B</i>									
0.5	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	73	27	-	-	-	1.9	0	0
	TITE-PIPE-O	75	25	-	-	-	1.9	0	0
1	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	75	25	-	-	-	2.0	0	0
	TITE-PIPE-O	78	22	-	-	-	2.0	0.1	0.1
2	PIPE	73	27	-	-	-	1.9	0	0
	TITE-PIPE-C	78	22	-	-	-	2.0	0	0
	TITE-PIPE-O	85	15	-	-	-	2.2	0.2	0
<i>Scenario C</i>									
0.5	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	14	23	34	22	1	1.3	5.3	3.3
	TITE-PIPE-O	14	23	35	20	1	1.3	7.0	4.5
1	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	14	23	34	21	2	1.3	5.8	3.5
	TITE-PIPE-O	15	21	33	22	1	1.2	7.6	4.9
2	PIPE	14	24	35	19	2	1.3	6.2	3.2
	TITE-PIPE-C	13	20	33	23	2	1.3	7.8	4.2
	TITE-PIPE-O	14	22	32	22	2	1.2	9.2	5.0
<i>Scenario D</i>									
0.5	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	96.6	88.2
	TITE-PIPE-O	-	-	-	2	1	0	96.5	88.3
1	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	2	1	0	97.0	88.1
	TITE-PIPE-O	-	-	-	1	1	0	97.9	89.5
2	PIPE	-	-	-	3	2	0	96.0	88.4
	TITE-PIPE-C	-	-	-	1	1	0	97.4	88.5
	TITE-PIPE-O	-	-	-	1	1	0	98.2	89.4
<i>Scenario E</i>									
0.5	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	37	0	-	2.0	1.1	0.8
	TITE-PIPE-O	30	32	36	0	-	2.0	1.5	1.4
1	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	31	32	36	0	-	2.0	1.0	0.8
	TITE-PIPE-O	31	31	35	0	-	2.0	2.1	1.7
2	PIPE	30	32	37	0	-	2.1	1.0	0.7
	TITE-PIPE-C	30	32	36	0	-	2.0	1.5	1.1
	TITE-PIPE-O	33	32	32	0	-	1.9	2.5	1.6
<i>Scenario F</i>									
0.5	PIPE	12	72	-	10	4	1.7	1.8	1.3
	TITE-PIPE-C	12	72	-	10	3	1.7	2.4	1.6
	TITE-PIPE-O	12	70	-	11	4	1.7	2.8	1.8
1	PIPE	12	72	-	10	4	1.7	1.8	1.3
	TITE-PIPE-C	12	72	-	10	3	1.7	2.8	1.8
	TITE-PIPE-O	12	70	-	10	4	1.7	3.4	2.1
2	PIPE	12	72	-	10	4	1.7	1.8	1.4
	TITE-PIPE-C	13	70	-	9	4	1.6	3.9	1.8
	TITE-PIPE-O	13	68	-	9	4	1.6	5.7	2.6
<i>Scenario G</i>									
0.5	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	44	38	17	1	1	2.7	0	0
	TITE-PIPE-O	44	37	17	1	1	2.7	0	0
1	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	44	38	17	1	1	2.7	0	0
	TITE-PIPE-O	45	35	18	1	1	2.7	0	0
2	PIPE	45	38	16	1	0	2.8	0	0
	TITE-PIPE-C	45	36	17	1	1	2.7	0	0
	TITE-PIPE-O	46	37	16	1	1	2.7	0	0

**Table S12.** Mean trial durations per design and scenario using uniform and adaptive weight functions (assuming Weibull distributed DLT model).

Arrival rate ( $\lambda$ )	Design	Scenario						
		A	B	C	D	E	F	G
<b>Uniform</b>								
0.5	PIPE	79.5 (-)	79.6 (-)	78.4 (-)	39.2 (-)	79.2 (-)	78.8 (-)	79.6 (-)
	TITE-PIPE-C	79.0 (-1)	79.1 (-1)	78.0 (-1)	39.9 (2)	78.7 (-1)	78.3 (-1)	79.1 (-1)
	TITE-PIPE-O	79.0 (-1)	79.1 (-1)	76.9 (-2)	39.3 (0)	78.6 (-1)	77.9 (-1)	79.1 (-1)
1	PIPE	42.2 (-)	42.6 (-)	41.7 (-)	20.8 (-)	42.1 (-)	41.9 (-)	42.4 (-)
	TITE-PIPE-C	40 (-5)	40.1 (-6)	39.5 (-5)	20.3 (-2)	39.8 (-5)	39.6 (-6)	40.1 (-5)
	TITE-PIPE-O	39.9 (-6)	40.1 (-6)	38.9 (-7)	19.9 (-4)	39.8 (-6)	39.4 (-6)	40.0 (-6)
2	PIPE	31.0 (-)	31.6 (-)	31.0 (-)	15.2 (-)	31.0 (-)	31.0 (-)	31.2 (-)
	TITE-PIPE-C	20.5 (-34)	20.6 (-35)	20.3 (-35)	10.7 (-30)	20.5 (-34)	20.4 (-34)	20.6 (-34)
	TITE-PIPE-O	20.4 (-34)	20.5 (-35)	19.9 (-36)	10.4 (-32)	20.3 (-35)	20.1 (-35)	20.5 (-34)
<b>Adaptive</b>								
0.5	PIPE	79.5 (-)	79.6 (-)	78.4 (-)	39.2 (-)	79.2 (-)	78.8 (-)	79.6 (-)
	TITE-PIPE-C	79.0 (-1)	79.1 (-1)	77.9 (-1)	39.1 (0)	78.7 (-1)	78.3 (-1)	79.1 (-1)
	TITE-PIPE-O	78.9 (-1)	79.1 (-1)	77.3 (-1)	38.8 (-1)	78.6 (-1)	78.1 (-1)	79.1 (-1)
1	PIPE	42.2 (-)	42.6 (-)	41.7 (-)	20.8 (-)	42.1 (-)	41.9 (-)	42.4 (-)
	TITE-PIPE-C	40.0 (-5)	40.1 (-6)	39.4 (-5)	19.8 (-5)	39.9 (-5)	39.6 (-6)	40.1 (-5)
	TITE-PIPE-O	40.0 (-5)	40.0 (-6)	39.1 (-6)	19.4 (-7)	39.7 (-6)	39.5 (-6)	40.0 (-6)
2	PIPE	31.0 (-)	31.6 (-)	31.0 (-)	15.2 (-)	31.0 (-)	31.0 (-)	31.2 (-)
	TITE-PIPE-C	20.6 (-34)	20.6 (-35)	20.2 (-35)	10.6 (-30)	20.5 (-34)	20.4 (-34)	20.6 (-34)
	TITE-PIPE-O	20.5 (-34)	20.5 (-35)	20.0 (-35)	10.3 (-33)	20.3 (-34)	20.2 (-35)	20.5 (-34)