

**Supplementary Table 3.** Data Set for  $\theta_1$ 

No. of trials	Planning value (°)	With patient specific instrument		Without patient specific instrument	
		Measured value (°)	Error (°)	Measured value (°)	Error (°)
	A	B	B-A	C	C-A
1	45.00	46.52	1.52	44.42	0.58
2	45.00	45.18	0.18	43.11	1.89
3	45.00	45.18	0.18	43.11	1.89
4	45.00	40.98	4.02	48.06	3.06
5	45.00	42.34	2.66	40.32	4.68
6	45.00	43.72	1.28	41.26	3.74
7	45.00	46.52	1.52	44.50	0.50
8	45.00	45.18	0.18	43.11	1.89
9	45.00	43.72	1.28	43.11	1.89
10	45.00	41.94	3.06	49.36	4.36
11	45.00	40.98	4.02	44.06	0.94
12	45.00	46.52	1.52	45.48	0.48
13	45.00	43.72	1.28	41.15	3.85
14	45.00	46.52	1.52	44.06	0.94
15	45.00	51.81	6.81	50.32	5.32
16	45.00	46.52	1.52	48.13	3.13
17	45.00	47.02	2.02	42.00	3.00
18	45.00	43.72	1.28	38.98	6.02
19	45.00	46.49	1.49	49.07	4.07
20	45.00	46.81	1.81	44.06	0.94
21	45.00	50.15	5.15	38.98	6.02
22	45.00	41.04	3.96	42.00	3.00
23	45.00	46.52	1.52	46.45	1.45
24	45.00	46.45	1.45	38.98	6.02
25	45.00	43.72	1.28	56.38	11.38
26	45.00	43.72	1.28	44.06	0.94
27	45.00	46.45	1.45	46.45	1.45
28	45.00	43.72	1.28	44.06	0.94
29	45.00	43.72	1.28	35.18	9.82
30	45.00	46.09	1.09	44.06	0.94