

WorldSID Repeatability and Reproducibility Requirements and Performance

The repeatability and reproducibility requirements and measured performance of the WorldSID are described herein.

1 Requirements

Repeatability of the WorldSID could only be assessed once the actual design was completed and built. Assessment of reproducibility requires multiple dummies. At the design level, low mass, low dimensional tolerances, selection of strong materials, and good symmetry (where applicable) were to help ensure that the dummy would meet overall repeatability requirements. In addition, certification procedures were to be developed that would consider body part responses relevant to the expected test conditions.

General repeatability requirements for the WorldSID were to be that the cumulative variance (CV) on injury assessment and calibration signals would be less than or equal to 7% in both certification and in general use.

Further details of the specific body region repeatability and reproducibility needs were presented in the Design Brief^[1].

2 Performance

The repeatability and reproducibility performance of the WorldSID is described subsequently, based on the test data available up through early May 2004.

2.1 General

A series of tests was performed for the purpose of assessing the repeatability of the WorldSID pre-production dummy. Analysis was performed using the coefficient of variation (CV) as a figure of merit. The CV is defined as the standard deviation of the samples divided by the sample mean, and is expressed as a percentage. Responses which have a CV of 3% or less, are commonly considered as having an excellent level of repeatability, whilst a value of 10% and above is considered to have a poor level of repeatability.

Due to the limited amount of testing done prior to May 2004, the pre-production dummy test results which follow include a combination of repeat tests performed on the same part (repeatability) and tests performed on different parts (reproducibility). The CV values from these tests should be considered as general indications of the WorldSID repeatability and reproducibility.

The certification tests performed on the various WorldSID pre-production dummy body parts are described in WorldSID Task Group Users Manual TGN 393^[2] and the data from those tests are given in Annex A. The repeatability results are given in the Tables below.

2.2 Head

The repeatability results for the head are given in Table 1.

Table 1 – Head test repeatability results

Response measurements	CV (%)
Lateral drop peak resultant CG acceleration	2,3
Frontal drop peak resultant CG acceleration	1,4

2.3 Neck

The repeatability results for the neck are given in Table 2.

Table 2 – Neck test repeatability results

Response measurements	CV (%)
Peak flexion angle	4,4
Peak M_x	1,3

2.4 Shoulder

The repeatability results for the shoulder are given in Table 3.

Table 3 – Shoulder repeatability results

Response measurements	CV (%)
Pendulum force	3,7
Peak shoulder deflection	5,5

2.5 Thorax

2.5.1 Thorax with arm

The repeatability results for the thorax with arm are given in Table 4

Table 4 – Thorax with arm repeatability results

Response measurements	CV (%)
Pendulum force	4,2
Upper spine T4 lateral acceleration	8,5
Lower spine T12 lateral acceleration	9,4
Thorax rib 1 deflection	8,6
Thorax rib 2 deflection	4,5
Thorax rib 3 deflection	6,0

2.5.2 Thorax without arm

The repeatability results for the thorax without arms are given in Table 5.

Table 5 – Thorax no arm repeatability results

Response measurements	CV (%)
Pendulum force	3,5
Upper spine T4 lateral acceleration	8,9
Lower spine T12 lateral acceleration	8,5
Thorax rib 1 deflection	8,3
Thorax rib 2 deflection	4,3
Thorax rib 3 deflection	4,3

2.6 Abdomen

The repeatability results for the abdomen are given in Table 6.

Table 6 – Abdomen repeatability results

Response measurements	CV (%)
Pendulum force	3,0
Peak acceleration of the lower spine T12	6,0
Abdomen rib 1 deflection	3,9
Abdomen rib 2 deflection	3,9

2.7 Pelvis

The repeatability results for the pelvis are given in Table 7.

Table 7 – Pelvis repeatability results

Response measurements	CV (%)
Pendulum force	3,7
Pelvis acceleration	6,9

Annex A

Repeatability and Reproducibility Data

A.1 Head

The head repeatability and reproducibility data are given in Tables A.1 and A.2.

Table A.1 – Lateral head repeatability and reproducibility

Item number	Lateral test number	Test date	Side	Resultant at CG propose 92-114 G
1	WA3009-1	2003-07-16	left	105,5
2	WA3009-2	2003-07-16	right	106,1
3	WA3009-5	2003-07-17	left	105,4
4	WA3009-6	2003-07-17	right	106,2
5	WA3009-21	2003-07-25	left	99,3
6	WA3009-22	2003-07-25	right	100,6
7	WA3009-26	2003-07-25	right	103,6
8	WA3009-27	2003-07-25	left	100,1
9	WA3009-32	2003-07-25	left	99,8
10	WA3009-33	2003-07-28	right	101,2
11	WA3010-1	2003-08-21	left	102,3
12	WA3010-2	2003-08-21	right	103,7
13	WA3010-4	2003-08-21	left	102,7
14	WA3010-5	2003-08-21	right	105,1
	Average			103,0
	Stdev			2,4
	CV			2,3%

Table A.2 – Frontal head repeatability and reproducibility

Frontal test number	Date	Side	Resultant at CG corridor 225-275 G
WA3009-3	2003-07-16	frontal	231,7
WA3009-4	2003-07-17	frontal	236,1
WA3009-28	2003-07-25	frontal	228,7

Frontal test number	Date	Side	Resultant at CG corridor 225-275 G
WA3009-31	2003-07-28	frontal	228,9
WA3010-3	2003-08-21	frontal	226,5
WA3010-6	2003-08-21	frontal	228,1
Average			230,0
Stdev			3,13
CV			1,4%

A.2 Neck

The neck repeatability and reproducibility data are given in Table A.3.

Table A.3 – Neck repeatability and reproducibility data

Test number	Peak flexion angle	Peak M_x at occipital condyle
	degree	Nm
1	58,8	not measured
2	59,2	not measured
3	54,1	not measured
4	53,9	not measured
5	55,3	not measured
6	53,5	67,24
7	53,5	65,84
8	53,9	66,50
9	58,1	64,86
10	58,7	66,10
11	58,49	65,12
Average	56,13	65,94
Stdev	2,47	0,88
C.V.	4,4%	1,3%

A.3 Shoulder

The shoulder repeatability and reproducibility data are given in Table A.4.

Table A.4 – Shoulder repeatability and reproducibility

Item number	Test ID	Test date	S/N	Left/right	Velocity 4,40-4,60 m/s	Max probe <i>F</i> kN	Shoulder defl Mm	Dummy S/N
1	47638	2003-03-05	WJ3002-5	L	4,42	3,10	39,4	WS-001
2	47791	2003-03-06	WJ3002-6	R	4,52	2,98	39,6	WS-001
3	47797	2003-03-06	WJ3002-7	R	4,55	3,09	39,8	WS-001
4	47833	2003-03-06	WJ3002-8	R	4,55	3,00	42,4	WS-001
5	47933	2003-03-10	WJ3003-1	R	4,49	3,20	35,2	WS-002
6	47977	2003-03-10	WJ3003-2	R	4,52	3,11	37,0	WS-002
7	47937	2003-03-10	WJ3004-1	L	4,52	3,01	38,0	WS-002
8	47954	2003-03-10	WJ3004-2	L	4,49	3,15	36,4	WS-002
9	48368	2003-03-16	WJ3005-1	R	4,49	3,14	35,5	WS-003
10	49502	2003-03-17	WJ3005-2	R	4,49	2,93	40,8	WS-003
11	48331	2003-03-15	WJ3006-1	L	4,47	3,09	37,6	WS-003
12	48341	2003-03-15	WJ3006-2	L	4,49	2,94	41,9	WS-003
13	48381	2003-03-16	WJ3007-1	L	4,47	3,07	38,8	WS-004
14	48386	2003-03-16	WJ3007-2	L	4,49	3,00	40,8	WS-004
15	48479	2003-03-17	WJ3008-1	R	4,52	3,04	39,4	WS-004
16	48484	2003-03-17	WJ3008-2	R	4,55	3,00	39,1	WS-004
17	49547	2003-04-05	WJ3009-1	L	4,49	2,97	37,2	WS-006
18	49551	2003-04-05	WJ3009-2	L	4,47	2,90	37,7	WS-006
19	49519	2003-04-04	WJ3010-1	R	4,52	2,92	35,5	WS-006
20	49523	2003-04-04	WJ3010-2	R	4,49	2,90	35,7	WS-006
21	50347	2003-04-26	WJ3011-1	R	4,41	2,65	37,0	WS-007
22	50350	2003-04-26	WJ3011-2	R	4,44	2,77	37,5	WS-007
23	50363	2003-04-27	WJ3012-1	L	4,49	2,97	37,2	WS-007
24	50368	2003-04-27	WJ3012-2	L	4,47	2,93	37,8	WS-007
25	49454	2003-04-03	WJ3013-1	R	4,49	2,92	35,2	WS-005
26	49457	2003-04-03	WJ3013-2	R	4,47	2,88	36,2	WS-005
27	49506	2003-04-04	WJ3014-1	L	4,49	3,07	35,8	WS-005
28	49509	2003-04-04	WJ3014-2	L	4,49	3,06	36,1	WS-005
29	50311	2003-04-25	WJ3015-1	R	4,52	2,96	33,2	WS-008
30	50318	2003-04-25	WJ3015-2	R	4,47	2,95	35,4	WS-008
31	50328	2003-04-25	WJ3016-1	L	4,47	2,84	35,7	WS-008
32	50329	2003-04-26	WJ3016-2	L	4,47	2,96	35,9	WS-008
33	50928	2003-06-20	WJ3021-1	L	4,47	2,93	35,2	WS-011
34	50933	2003-06-20	WJ3021-2	L	4,49	3,04	34,6	WS-011

Item number	Test ID	Test date	S/N	Left/right	Velocity 4,40-4,60 m/s	Max probe <i>F</i> kN	Shoulder defl Mm	Dummy S/N
35	50830	2003-06-20	WJ3022-1	R	4,44	2,99	35,3	WS-011
36	50834	2003-06-20	WJ3022-2	R	4,44	2,94	35,3	WS-011
37	51400	2003-06-20	WJ3024-1	R	4,44	2,86	38,1	WS-010
38	51404	2003-06-20	WJ3024-2	R	4,44	2,92	37,4	WS-010
39	51460	2003-06-20	WJ3025-1	L	4,47	3,01	37,0	WS-010
40	51465	2003-06-20	WJ3025-2	L	4,47	2,87	39,5	WS-010
41	52560	2003-07-03	WJ3027-1	L	4,44	2,96	37,4	WS-009
42	52565	2003-07-03	WJ3027-2	L	4,47	2,81	39,9	WS-009
43	52509	2003-06-24	WJ3028-1	R	4,44	2,76	38,4	WS-009
44	52514	2003-06-24	WJ3028-2	R	4,44	2,81	39,4	WS-009
	Average				4,48	2,96	37,46	
	Stdev				0,03	0,11	2,07	
	CV				0,75%	3,75%	5,52%	

A.4 Thorax

A.4.1 Thorax with arm

The thorax with arm repeatability and reproducibility data are given in Table A.5.

Table A.5 – Thorax with arm repeatability and reproducibility

Test ID	Test date	S/N	Left/right	Velocity 6.60-6.80 m/s	Max probe <i>F</i> kN	Thorax rib deflection			Spine accelerometer		Dummy S/N
						1st rib	2nd rib	3rd rib	Upper (T4)	Lower (T12)	
47678	2003-03-05	WD0010-10	L	6,57	5,16	63,6	64,0	46,3	30,5	23,8	WS-001
47683	2003-03-05	WD0010-11	L	6,74	5,53	60,1	70,7	53,3	26,5	23,0	WS-001
47964	2003-03-10	WD0011-3	L	6,74	5,64	49,7	66,1	48,5	25,1	19,0	WS-002
49696	2003-03-10	WD0011-4	L	6,74	5,60	48,8	70,8	55,9	23,7	23,5	WS-002
48000	2003-03-10	WD0011-7	R	6,62	5,61	53,4	61,2	47,7	22,9	22,8	WS-002
48002	2003-03-10	WD0011-8	R	6,68	5,53	45,2	61,2	51,6	19,2	22,3	WS-002
48377	2003-03-16	WD0012-10	R	6,62	5,35	55,1	63,9	48,4	24,5	20,5	WS-003
48378	2003-03-16	WD0012-11	R	6,68	5,19	56,0	64,3	49,5	22,5	20,0	WS-003
48359	2003-03-15	WD0012-5	L	6,62	5,10	55,9	68,6	57,9	22,6	21,7	WS-003

Test ID	Test date	S/N	Left/right	Velocity 6.60-6.80 m/s	Max probe <i>F</i> kN	Thorax rib deflection			Spine accelerometer		Dummy S/N
						1st rib	2nd rib	3rd rib	Upper (T4)	Lower (T12)	
48361	2003-03-15	WD0012-6	L	6,68	5,05	68,8	70,2	56,5	21,2	19,3	WS-003
48490	2003-03-17	WD0013-7	R	6,62	5,43	58,3	68,1	51,0	27,0	23,9	WS-004
48499	2003-03-17	WD0013-8	R	6,62	5,25	58,6	68,1	53,0	25,7	21,6	WS-004
49516	2003-04-04	WD0014-11	L	6,68	5,34	54,2	69,7	56,5	23,2	22,3	WS-005
49518	2003-04-04	WD0014-12	L	6,62	5,31	52,0	69,0	54,4	23,5	20,9	WS-005
49469	2003-04-03	WD0014-5	R	6,74	5,45	53,2	63,2	51,0	23,9	24,5	WS-005
49486	2003-04-04	WD0014-6	R	6,8	5,27	58,2	64,6	52,5	25,5	21,8	WS-005
49488	2003-04-04	WD0014-7	R	6,74	5,39	55,6	64,2	52,1	25,4	23,8	WS-005
49491	2003-04-04	WD0014-8	R	6,74	5,21	56,3	66,5	55,6	23,9	21,6	WS-005
50355	2003-04-26	WD0016-3	R	6,62	4,87	58,7	66,4	54,0	25,1	23,2	WS-006
50361	2003-04-26	WD0016-4	R	6,68	4,72	63,1	66,5	52,5	24,9	19,6	WS-006
50372	2003-04-27	WD0016-7	L	6,62	5,48	58,5	69,9	56,5	24,6	24,4	WS-006
50376	2003-04-27	WD0016-8	L	6,68	5,41	57,2	70,3	57,9	24,3	24,1	WS-006
50321	2003-04-25	WD0017-3	R	6,62	5,18	57,8	64,2	52,7	24,3	23,9	WS-008
50325	2003-04-25	WD0017-4	R	6,68	5,36	57,9	65,5	52,6	25,0	24,7	WS-008
50344	2003-04-26	WD0017-8	L	6,68	5,35	56,6	70,1	55,1	24,7	28,7	WS-008
Average				6,67	5,31	56,51	66,69	52,92	24,39	22,60	
Stdev				0,06	0,22	4,85	2,99	3,20	2,08	2,13	
CV				0,86%	4,19%	8,58%	4,48%	6,04%	8,52%	9,43%	

A.4.2 Thorax without arm

The thorax without arm repeatability and reproducibility data are given in Table A.6.

Table A.6 – Thorax without arm repeatability and reproducibility

Test Date	S/N	Left/right	Velocity 4,2-4,4 m/s	Max probe <i>F</i> kN	Thorax rib deflection			Spine accelerometer		Dummy S/N
					1st rib	2nd rib	3rd rib	Upper (T4)	Lower (T12)	
2003-03-06	WD0010-12	R	4,34	3,97	51,7	48,1	39,0	17,9	22,4	WS-001
2003-03-06	WD0010-13	R	4,34	3,90	54,1	49,2	38,7	18,8	21,3	WS-001
2003-03-05	WD0010-8	L	4,29	3,68	48,9	48,8	41,0	12,9	18,1	WS-001
2003-03-05	WD0010-9	L	4,29	3,67	53,8	51,5	42,0	14,3	20,5	WS-001
2003-03-10	WD0011-1	L	4,29	4,02	49,0	50,3	39,3	14,7	25,7	WS-002

Test Date	S/N	Left/right	Velocity 4,2-4,4 m/s	Max probe <i>F</i> kN	Thorax rib deflection			Spine accelerometer		Dummy S/N
					1st rib	2nd rib	3rd rib	Upper (T4)	Lower (T12)	
2003-03-10	WD0011-2	L	4,32	4,00	50,9	51,5	39,1	14,9	20,0	WS-002
2003-03-10	WD0011-5	R	4,34	4,19	44,1	44,6	36,0	16,6	21,2	WS-002
2003-03-10	WD0011-6	R	4,32	4,14	44,9	45,1	35,9	15,9	20,9	WS-002
2003-03-15	WD0012-1	L	4,29	3,87	48,8	49,0	41,8	15,4	20,4	WS-003
2003-03-15	WD0012-4	L	4,32	3,84	51,1	49,4	41,8	15,9	21,0	WS-003
2003-03-16	WD0012-8	R	4,32	4,09	45,0	45,3	36,3	14,9	19,7	WS-003
2003-03-16	WD0012-9	R	4,36	4,06	49,4	45,2	35,5	15,8	21,7	WS-003
2003-03-16	WD0013-1	L	4,32	4,04	47,1	48,3	40,9	15,3	21,7	WS-004
2003-03-16	WD0013-3	L	4,32	3,97	50,6	48,7	40,8	16,4	23,8	WS-004
2003-03-17	WD0013-5	R	4,32	3,99	43,7	48,8	39,4	14,1	20,8	WS-004
2003-03-17	WD0013-6	R	4,32	3,97	47,0	47,7	39,8	15,5	22,8	WS-004
2003-04-04	WD0014-10	L	4,32	4,07	41,7	47,5	39,9	14,4	20,5	WS-005
2003-04-03	WD0014-2	R	4,29	3,80	45,4	45,2	39,1	13,2	18,5	WS-005
2003-04-03	WD0014-3	R	4,32	3,88	53,2	47,3	38,0	15,9	21,5	WS-005
2003-04-04	WD0014-9	L	4,32	3,97	46,4	46,5	39,0	16,9	21,1	WS-005
2003-04-04	WD0015-1	R	4,29	3,81	45,6	48,7	40,2	17,1	18,4	WS-006
2003-04-04	WD0015-2	R	4,29	3,76	46,3	49,0	40,1	17,8	18,9	WS-006
2003-04-05	WD0015-5	L	4,29	4,05	45,7	48,9	39,1	15,1	20,7	WS-006
2003-04-05	WD0015-6	L	4,32	4,10	42,4	49,3	39,6	14,2	18,8	WS-006
2003-04-26	WD0016-1	R	4,24	3,64	34,9	43,8	40,4	14,6	18,7	WS-016
2003-04-26	WD0016-2	R	4,29	3,83	51,9	45,7	39,8	15,5	20,9	WS-016
2003-04-27	WD0016-5	L	4,29	4,07	48,0	46,4	38,8	16,3	24,1	WS-016
2003-04-27	WD0016-6	L	4,24	3,95	45,4	46,8	39,2	15,2	23,7	WS-016
2003-04-25	WD0017-1	R	4,32	4,05	49,9	44,6	39,3	14,4	22,0	WS-008
2003-04-25	WD0017-2	R	4,24	3,94	48,7	44,7	37,1	13,5	21,3	WS-008
2003-04-26	WD0017-5	L	4,27	3,89	46,0	46,1	37,9	14,0	18,8	WS-008
2003-04-26	WD0017-6	L	4,27	3,91	47,6	48,2	38,7	15,1	20,8	WS-008
Average			4,30	3,94	47,47	47,51	39,17	15,39	20,96	
Stdev			0,03	0,14	3,95	2,06	1,67	1,36	1,79	
CV			0,68%	3,48%	8,31%	4,33%	4,26%	8,86%	8,53%	

A.5 Abdomen

The abdomen repeatability and reproducibility data are given in Table A.7.

Table A.7 – Abdomen repeatability and reproducibility

Test number	Test ID	Test date	S/N	Left/right	Velocity 4,2-4,4 m/s	Max probe <i>F</i> kN	Abdomen rib deflection		Lower spine accelerometer	Dummy S/N
							1st rib	2nd rib	(T12)	
1	52211	2003-06-16	WI0020-6	L	4,27	2,85	42,3	45,2	18,5	WS-010
2	52212	2003-06-16	WI0020-7	L	4,24	2,91	42,7	43,3	19,4	WS-010
3	52213	2003-06-16	WI0020-8	R	4,22	2,98	40,9	45,3	19,0	WS-010
4	52214	2003-06-16	WI0020-9	R	4,27	2,94	41,6	43,2	19,3	WS-010
5	52407	2003-06-19	WI0018-6	L	4,24	2,86	39,5	41,6	21,2	WS-011
6	52409	2003-06-19	WI0018-7	L	4,24	2,94	40,0	40,7	21,8	WS-011
7	51422	2003-06-19	WI0018-8	R	4,24	2,98	42,4	43,7	19,4	WS-011
8	52425	2003-06-20	WI0018-9	R	4,27	2,87	44,0	46,2	18,3	WS-011
9	52517	2003-06-24	WI0019-1	R	4,22	3,06	41,9	41,6	20,2	WS-009
10	52542	2003-06-25	WI0019-3	R	4,22	3,00	40,5	43,7	19,1	WS-009
11	52568	2003-06-25	WI0019-4	L	4,27	3,01	40,0	43,9	20,5	WS-009
12	52571	2003-06-25	WI0019-5	L	4,24	3,16	38,2	42,0	21,6	WS-009
		Average			4,25	2,96	41,17	43,37	19,86	
		Stdev			0,02	0,09	1,62	1,68	1,19	
		CV			0,48%	3,02%	3,93%	3,86%	5,97%	

A.6 Pelvis

The pelvis repeatability and reproducibility data are given in Table A.8.

Table A.8 – Pelvis repeatability and reproducibility

Test ID	Test date	S/N	Left/right	Velocity 6,6-6,8 m/s	Max probe <i>F</i> kN	Pelvis accelerometer G	Dummy SN
48329	2003-03-15	WK3004-1	L	6,62	7,40	42,1	WS-003
49339	2003-03-16	WK3004-2	L	6,68	7,05	41,2	WS-003
48371	2003-03-16	WK3004-3	R	6,68	7,02	43,5	WS-003
48379	2003-03-16	WK3004-4	R	6,62	6,91	43,7	WS-003
47935	2003-03-14	WK3005-1	L	6,68	7,37	43,7	WS-002
47946	2003-03-10	WK3005-2	L	6,62	7,30	43,8	WS-002
47922	2003-03-10	WK3005-3	R	6,74	6,95	45,7	WS-002
47996	2003-03-10	WK3005-4	R	6,68	7,37	42,0	WS-002
47999	2003-03-10	WK3005-5	R	6,68	7,36	43,0	WS-002
48380	2003-03-16	WK3006-1	L	6,57	7,08	42,8	
48385	2003-03-16	WK3006-2	L	6,62	7,25	42,2	
48396	2003-03-16	WK3006-3	R	6,74	7,26	38,6	
48483	2003-03-17	WK3006-4	R	6,68	6,98	39,0	
48487	2003-03-17	WK3006-5	R	6,68	6,87	39,2	
48453	2003-04-03	WK3007-1	R	6,68	7,50	50,8	WS-005
49458	2003-04-03	WK3007-2	R	6,68	7,36	50,6	WS-005
49459	2003-04-03	WK3007-3	L	6,57	7,41	49,1	WS-005
49460	2003-04-03	WK3007-4	L	6,51	7,29	48,6	WS-005
49542	2003-04-05	WK3008-1	R	6,68	7,07	45,1	WS-006
49544	2003-04-05	WK3008-2	R	6,62	7,06	43,8	WS-006
49546	2003-04-05	WK3008-3	L	6,57	7,01	48,3	WS-006
49550	2003-04-05	WK3008-4	L	6,62	7,43	46,4	WS-006
50320	2003-04-25	WK3009-1	R	6,68	6,92	41,0	
50324	2003-04-25	WK3009-2	R	6,57	6,78	42,4	
50327	2003-04-25	WK3009-3	L	6,51	7,11	43,8	
50332	2003-04-26	WK3009-4	L	6,57	7,45	45,5	
50345	2003-04-26	WK3010-1	R	6,68	7,11	44,2	WS-007
50349	2003-04-26	WK3010-2	R	6,62	6,93	48,9	WS-007
50362	2003-04-27	WK3010-3	L	6,57	7,47	48,0	WS-007
50367	2003-04-27	WK3010-4	L	6,68	7,43	45,1	WS-007
50829	2003-05-12	WK3011-1	R	6,62	7,27	45,1	WS-010
50833	2003-05-12	WK3011-2	R	6,62	7,35	47,2	WS-010
50927	2003-05-14	WK3011-3	L	6,68	7,70	45,8	WS-010
50931	2003-05-14	WK3011-4	L	6,57	7,66	49,7	WS-010

Test ID	Test date	S/N	Left/right	Velocity 6,6-6,8 m/s	Max probe <i>F</i> kN	Pelvis accelerometer G	Dummy SN
50516	2003-04-30	WK3012-1	L	6,62	7,46	46,6	
50517	2003-04-30	WK3012-2	L	6,68	7,89	48,3	
50518	2003-04-30	WK3012-3	R	6,57	7,38	49,3	
50520	2003-04-30	WK3012-4	R	6,57	7,28	47,8	
52416	2003-06-19	WK3013-1	L	6,62	7,69	40,4	WS-011
52417	2003-06-19	WK3013-2	L	6,62	7,65	44,1	WS-011
52420	2003-06-19	WK3013-3	R	6,68	7,06	46,6	WS-011
52427	2003-06-20	WK3013-4	R	6,62	6,85	44,0	WS-011
52508	2003-06-24	WK3014-1	R	6,68	7,37	46,9	WS-009
52513	2003-06-24	WK3014-2	R	6,68	7,30	49,5	WS-009
52559	2003-06-25	WK3014-3	L	6,68	7,71	46,7	WS-009
52564	2003-06-25	WK3014-4	L	6,57	7,67	47,4	WS-009
Average				6,63	7,31	46,04	
Stdev				0,06	0,27	3,16	
CV				0,83%	3,67%	6,86%	

Bibliography

- [1] International Organization for Standardization.
ISO/TC22/SC12/WG5/WSTG N100, Revision 1, WorldSID - α Design Brief. 2000.
- [2] WorldSID Users Manual ISO/TC22/SC12/WG5/WSTG N393.