
**Informal Group on gtr No 9 - Phase 2 (IG GTR9-PH2)
2nd meeting, Osaka/Japan, 28 - 29 March 2012**

**Revision for 3rd meeting in Paris, 29 - 30 May 2012
See action items A-2-08 and A-2-09
GTR9-2-10-r2 completed during the 3. meeting on 30.05.2012**

FlexPLI Comparison

Action item A-1-14

Impactors: SN02, SN04, IND-Impactor
Test experiences



Data provided by Audi/Volkswagen

Presented by the pedestrian safety experts of the
International Automobile Manufacturers' Organization (OICA)

- test experience with 3 different Flex-PLI impactors
 - August 2009: SN04 prototype
 - July 2011: SN02 prototype
 - July 2011: Industrial Serial-impactor (Fa. Bertrandt)

- test of 3 different Vehicle-classes
 - large family car
 - SUV
 - sport car

- testing areas (Y-co-ordinates) are the same with all 3 different impactors

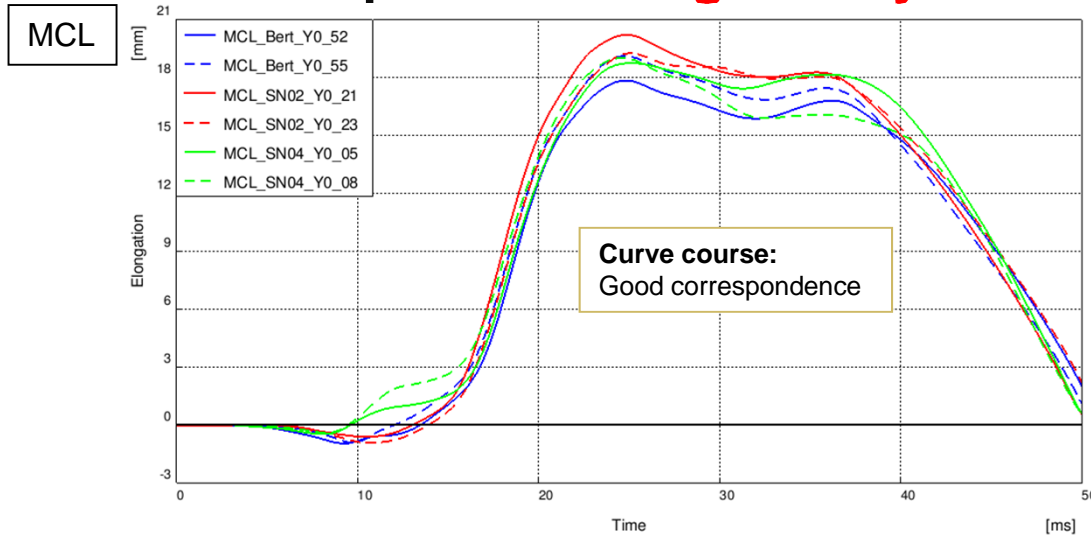
- information on impactor certification test results

Overview of results

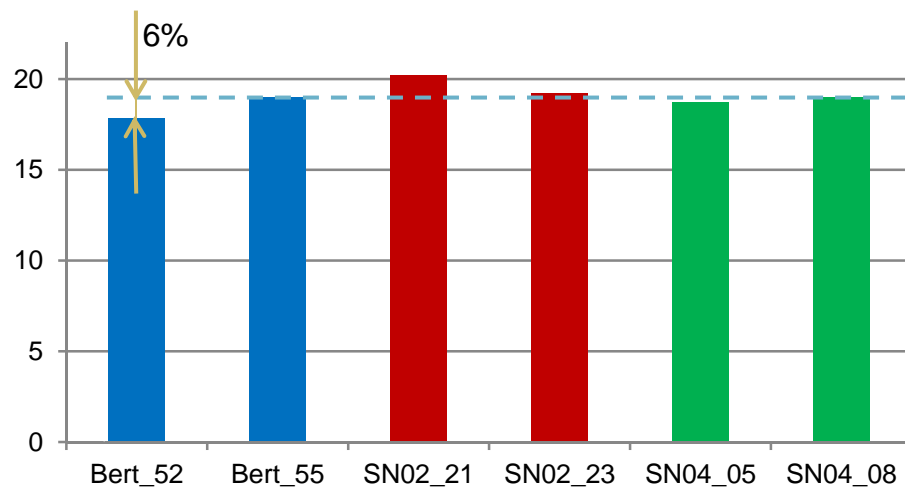
								max-value of column	229,6	208,8	249,2	275,9	20,2	5,7	15,2
								min-value of column	73,7	91,0	108,6	133,1	12,5	2,3	5,1
s1 = single test result															
m3 = mean value of 3 test result /															
No	Flex-GTR No	vehicle type	location	test	ACEA-memb	car No	Legende	Tibia A4	Tibia A3	Tibia A2	Tibia A1	MCL	PCL	ACL	
1	IN01	sedan	Y=0	s5	M1	C1	IN01/sedan/M1/C1	152,70	199,10	223,50	196,60	17,83	5,15	5,35	
2	IN01	sedan	Y=0	s6	M1	C1	IN01/sedan/M1/C1	148,30	201,70	224,20	206,80	19,01	4,92	6,31	
3	SN02	sedan	Y=0	s3	M1	C1	SN02/sedan/M1/C1	147,30	200,90	202,70	192,20	20,19	5,60	5,82	
4	SN02	sedan	Y=0	s4	M1	C1	SN02/sedan/M1/C1	150,60	208,80	222,60	199,60	19,23	4,86	6,04	
5	SN04	sedan	Y=0	s1	M1	C1	SN04/sedan/M1/C1	130,00	156,30	200,60	175,70	18,73	5,53	5,09	
6	SN04	sedan	Y=0	s2	M1	C1	SN04/sedan/M1/C1	126,20	162,40	199,40	185,30	18,99	5,71	5,18	
7	IN01	sedan	Y=340	s5	M1	C1	IN01/sedan/M1/C1	153,90	174,80	182,00	180,80	17,31	5,21	5,33	
8	IN01	sedan	Y=340	s6	M1	C1	IN01/sedan/M1/C1	154,40	178,00	192,30	191,90	17,55	5,02	5,63	
9	SN02	sedan	Y=340	s3	M1	C1	SN02/sedan/M1/C1	151,80	173,00	176,20	181,70	17,66	5,69	5,24	
10	SN04	sedan	Y=340	s1	M1	C1	SN04/sedan/M1/C1	154,20	152,50	183,90	207,40	13,66	4,66	8,35	
11	SN04	sedan	Y=340	s2	M1	C1	SN04/sedan/M1/C1	138,80	164,10	191,70	200,80	15,19	4,57	6,75	
12	IN01	SUV	Y=0	s5	M1	C2	IN01/SUV/M1/C2	96,30	177,80	238,90	259,90	15,69	3,59	9,43	
13	IN01	SUV	Y=0	s6	M1	C2	IN01/SUV/M1/C2	86,60	175,30	249,20	275,90	16,56	3,90	9,16	
14	SN02	SUV	Y=0	s3	M1	C2	SN02/SUV/M1/C2	76,30	169,40	235,90	271,90	15,44	3,21	9,01	
15	SN02	SUV	Y=0	s4	M1	C2	SN02/SUV/M1/C2	75,10	168,50	229,20	272,70	14,42	2,29	9,39	
16	SN04	SUV	Y=0	s1	M1	C2	SN04/SUV/M1/C2	79,60	161,60	231,30	260,20	14,72	3,56	9,39	
17	SN04	SUV	Y=0	s2	M1	C2	SN04/SUV/M1/C2	76,80	156,80	227,40	255,90	14,06	2,53	8,75	
18	IN01	SUV	Y=390	s5	M1	C2	IN01/SUV/M1/C2	77,50	143,70	173,90	184,70	13,79	3,87	8,36	
19	IN01	SUV	Y=390	s6	M1	C2	IN01/SUV/M1/C2	88,30	163,10	199,20	202,10	15,37	3,71	8,27	
20	SN02	SUV	Y=390	s3	M1	C2	SN02/SUV/M1/C2	85,90	160,40	178,90	194,20	14,02	3,51	9,61	
21	SN02	SUV	Y=390	s4	M1	C2	SN02/SUV/M1/C2	82,90	169,30	181,70	199,80	12,54	2,87	7,78	
22	SN04	SUV	Y=390	s1	M1	C2	SN04/SUV/M1/C2	73,70	149,40	154,50	166,80	13,98	4,45	7,98	
23	SN04	SUV	Y=390	s2	M1	C2	SN04/SUV/M1/C2	79,80	152,80	143,20	160,10	14,65	4,49	7,87	
24	IN01	sport	Y=-226	s5	M1	C3	IN01/sport/M1/C3	192,00	95,50	126,40	161,30	15,09	4,03	12,64	
25	IN01	sport	Y=-226	s6	M1	C3	IN01/sport/M1/C3	184,70	105,20	124,90	157,60	15,06	5,61	13,02	
26	SN02	sport	Y=-226	s3	M1	C3	SN02/sport/M1/C3	214,10	130,50	114,00	146,60	14,67	4,29	12,97	
27	SN02	sport	Y=-226	s4	M1	C3	SN02/sport/M1/C3	184,90	98,90	113,30	153,60	15,62	4,61	13,31	
28	SN04	sport	Y=-226	s1	M1	C3	SN04/sport/M1/C3	228,30	142,90	121,70	143,50	14,29	4,45	15,18	
29	SN04	sport	Y=-226	s2	M1	C3	SN04/sport/M1/C3	229,60	134,30	118,90	133,10	13,00	4,51	14,84	
30	IN01	sport	Y=270	s5	M1	C3	IN01/sport/M1/C3	194,40	91,00	121,40	150,60	15,16	4,54	12,27	
31	SN02	sport	Y=270	s3	M1	C3	SN02/sport/M1/C3	194,70	103,70	112,60	153,90	15,33	4,25	13,58	
32	SN02	sport	Y=270	s4	M1	C3	SN02/sport/M1/C3	206,50	119,30	108,60	140,90	14,78	4,22	13,43	
33	SN04	sport	Y=270	s1	M1	C3	SN04/sport/M1/C3	171,40	98,30	121,30	141,10	12,52	4,65	12,79	
34	SN04	sport	Y=270	s2	M1	C3	SN04/sport/M1/C3	196,50	113,40	123,00	139,90	13,01	4,15	14,23	

Test experiences **large family car** at Y0

Test experiences **large family car** at Y0



	MCL	t (max)
Bert_52	17.83	24.8
Bert_55	19.01	24.7
SN02_21	20.19	24.9
SN02_23	19.23	25.1
SN04_05	18.73	25.1
SN04_08	18.99	24.6



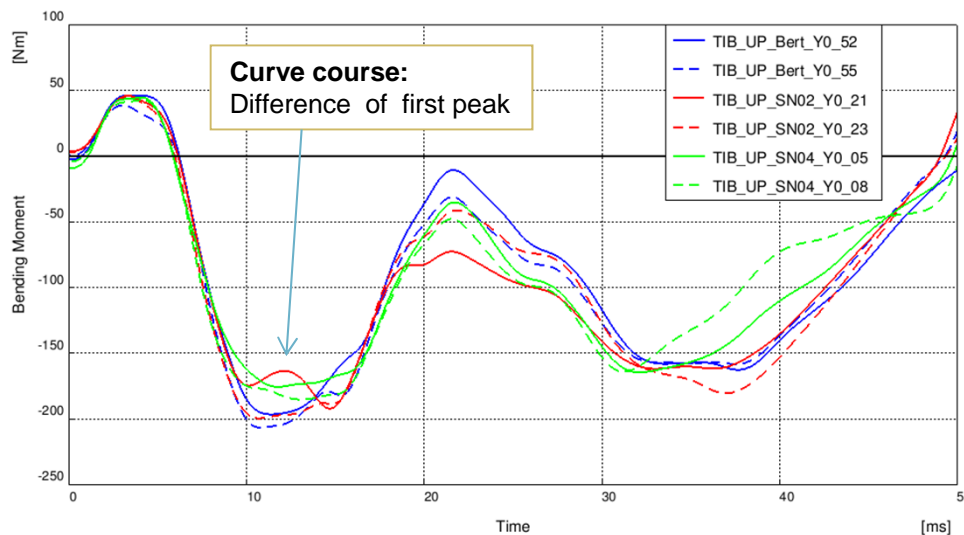
Result comparison of the max.value

Good correspondence (<10%)
-> Industrial-Imp. is comparable
with SN04 (Aug.2009)

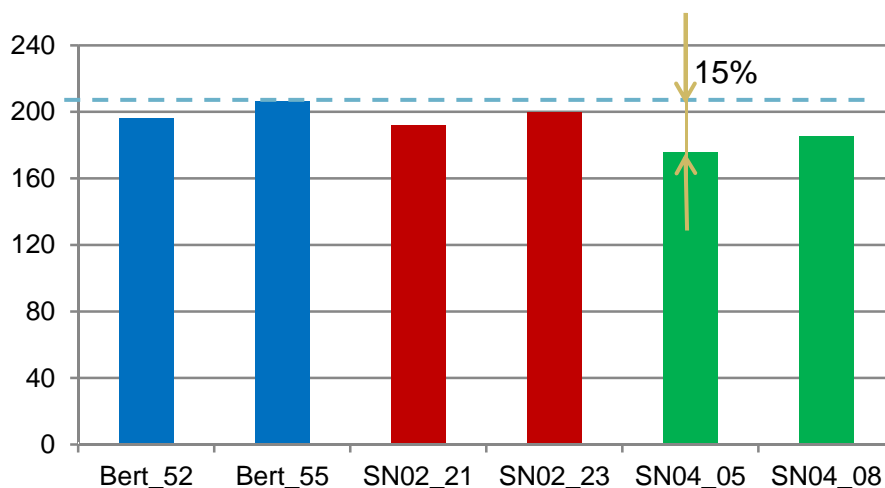
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences **large family car** at Y0

TIBIA (1) UP



	TIB UP	t (max)
Bert_52	196.6	11.4
Bert_55	206.8	10.8
SN02_21	192.2	14.7
SN02_23	199.6	10.7
SN04_05	175.7	11.8
SN04_08	185.3	13.1



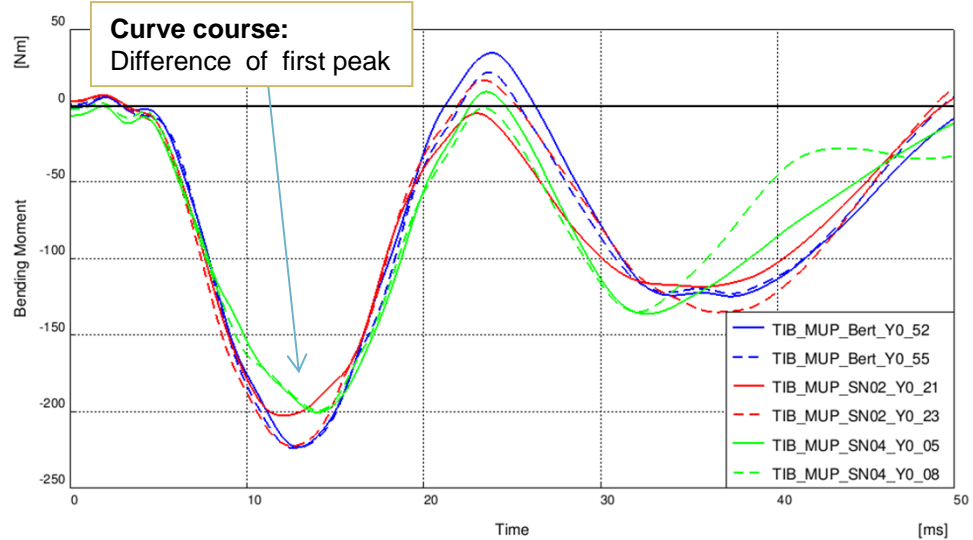
Result comparison of the max.value

High divergence (>10%)
 -> Industrial-Imp. shows higher values than SN04 (Aug.2009)

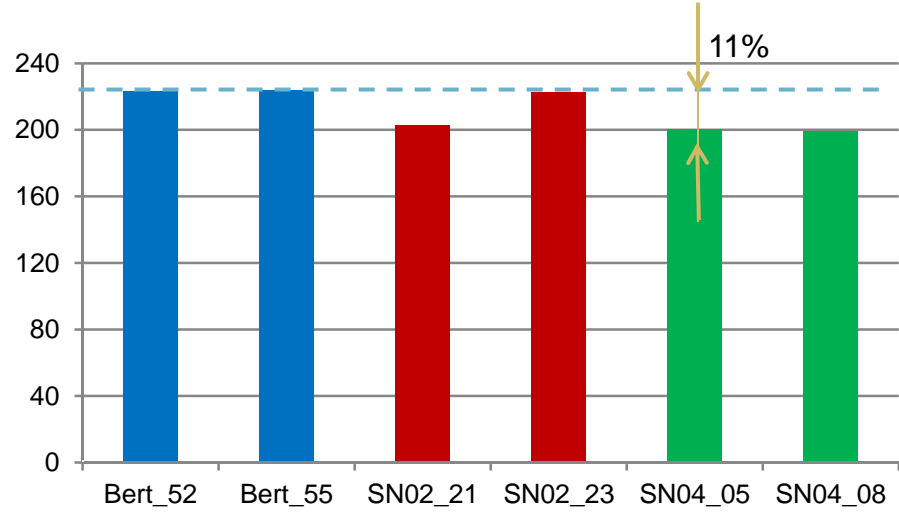
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- Repetition test

Test experiences **large family car** at Y0

TIBIA(2) MUP



	TIB MUP	t (max)
Bert_52	223.5	12.9
Bert_55	224.2	12.7
SN02_21	202.7	12.1
SN02_23	222.6	12.5
SN04_05	200.6	13.9
SN04_08	199.4	14



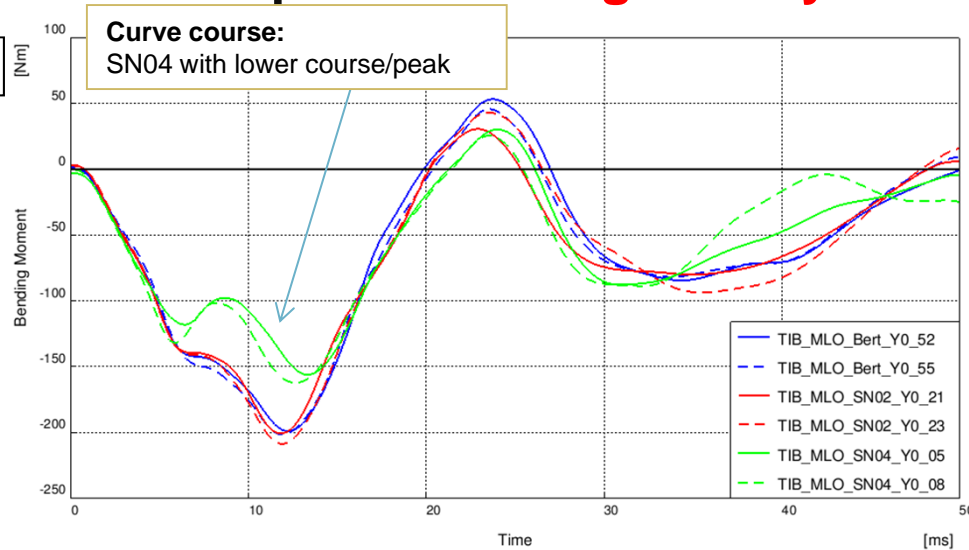
Result comparison of the max.value

Divergence near 10%
-> Industrial-Imp. shows higher values than SN04 (Aug.2009)

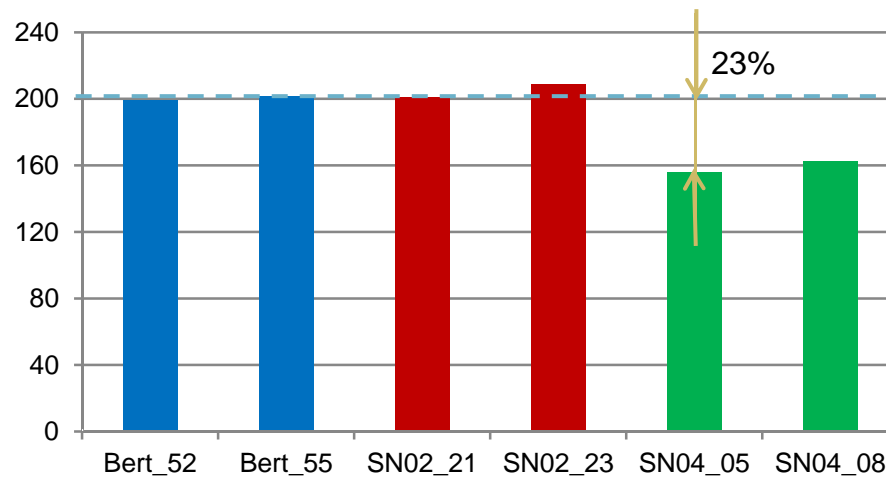
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences **large family car** at Y0

TIBIA(3) MLO



	TIB MLO	t (max)
Bert_52	199.1	12.2
Bert_55	201.7	11.9
SN02_21	200.9	11.8
SN02_23	208.8	11.9
SN04_05	156.3	13.3
SN04_08	162.4	12.7



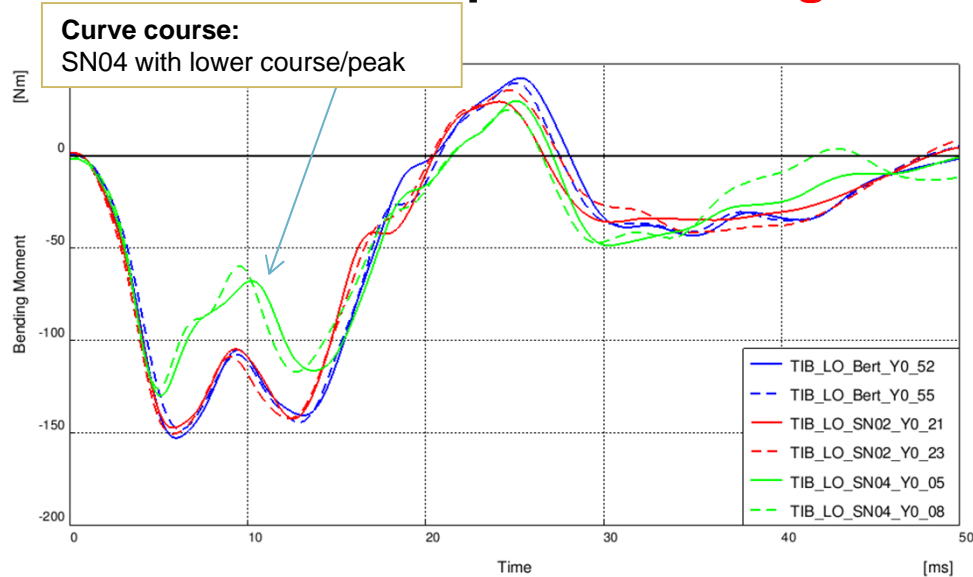
Result comparison of the max.value

High divergence (>10%)
 -> Industrial-Imp. shows higher values than SN04 (Aug.2009)

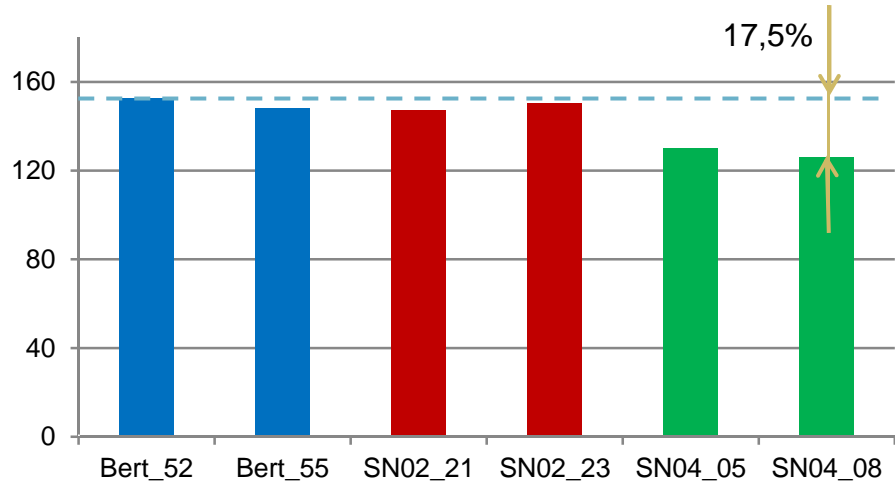
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences **large family car** at Y0

TIBIA(4) LO



	TIB LO	t (max)
Bert_52	152.7	5.9
Bert_55	148.3	6.2
SN02_21	147.3	5.8
SN02_23	150.6	5.8
SN04_05	130	5.1
SN04_08	126.2	4.9



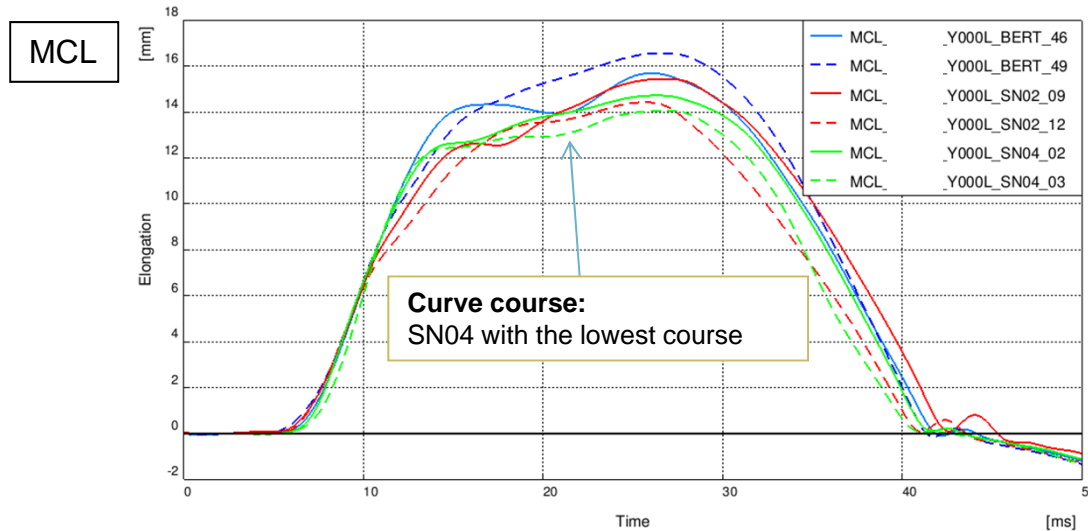
Result comparison of the max.value

High divergence (>10%)
-> Industrial-Imp. shows higher values than SN04 (Aug.2009)

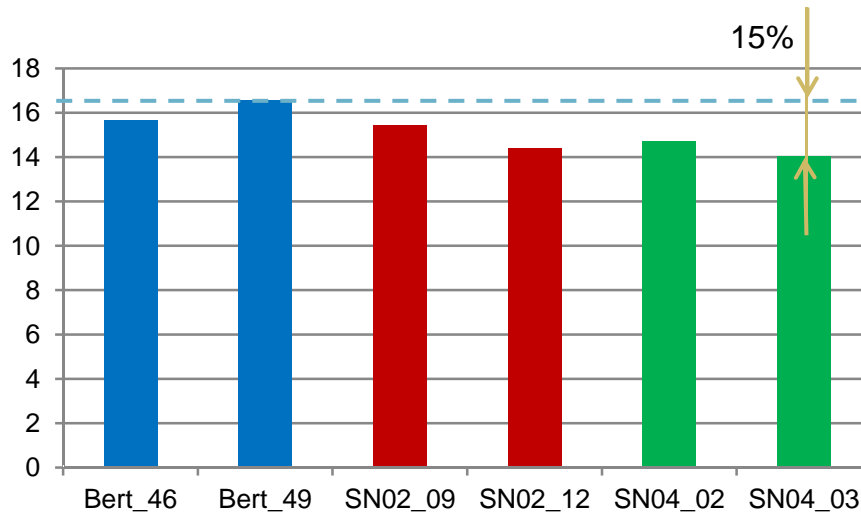
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y0

Test experiences SUV at Y0



	MCL	t (max)
Bert_46	15,69	26
Bert_49	16,56	26,6
SN02_09	15,44	26,7
SN02_12	14,42	25,7
SN04_02	14,72	26,3
SN04_03	14,06	26,9



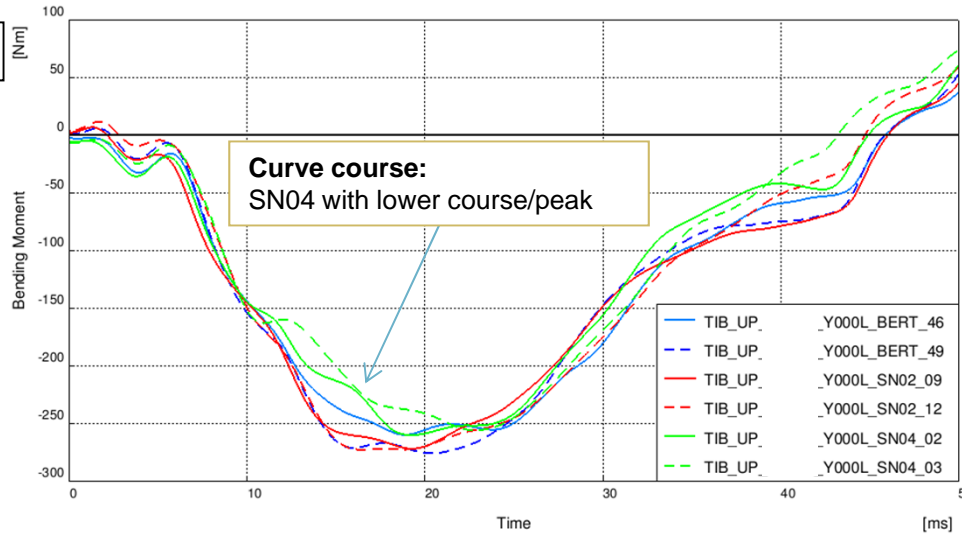
Result comparison of the max.value

High divergence (>10%)
 -> Industrial-Imp. shows higher values than SN04 (Aug.2009)

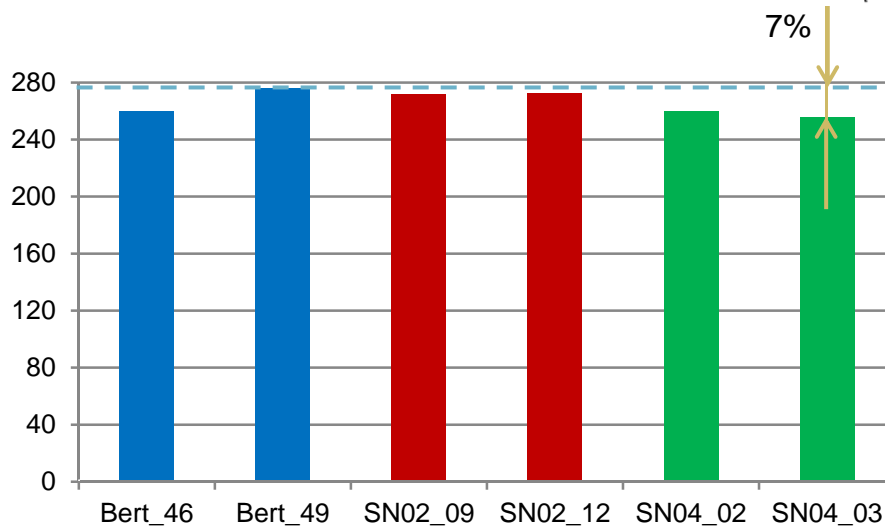
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y0

TIBIA(1) UP



	TIB UP	t (max)
Bert_46	259,9	18,9
Bert_49	275,9	20,4
SN02_09	271,9	19,3
SN02_12	272,7	16,4
SN04_02	260,2	19,2
SN04_03	255,9	22,8



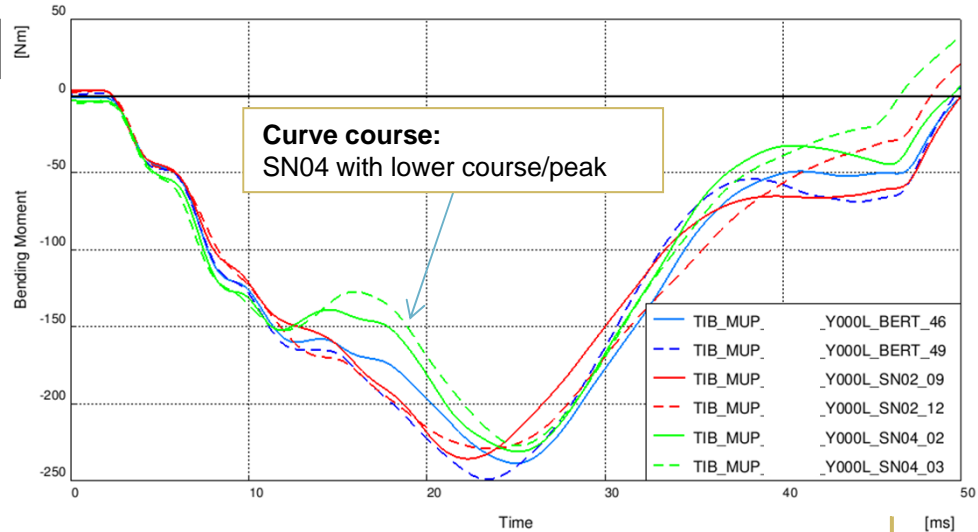
Result comparison of the max.value

Good correspondence (<10%)
-> Industrial-Imp. is comparable with SN04 (Aug.2009)

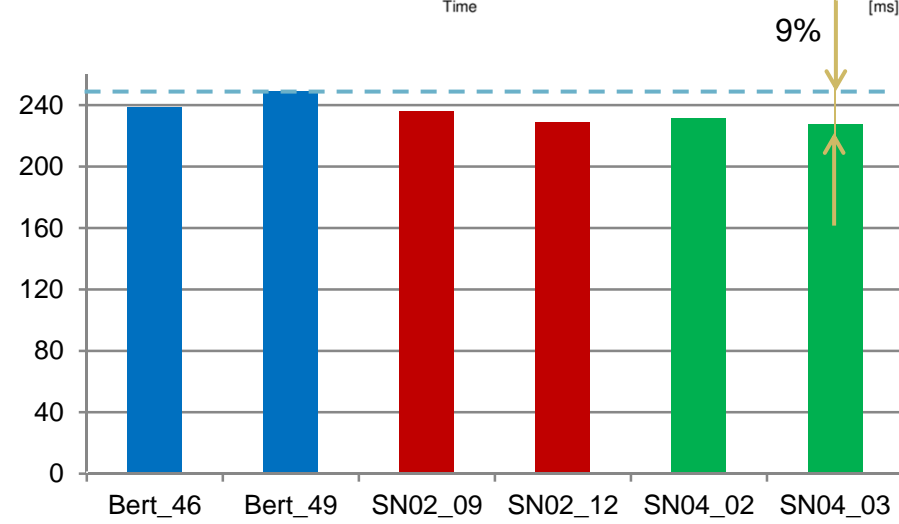
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y0

TIBIA(2) MUP



	TIB MUP	t (max)
Bert_46	238,9	25
Bert_49	249,2	23,4
SN02_09	235,9	22,3
SN02_12	229,2	23,5
SN04_02	231,3	25,1
SN04_03	227,4	25,1



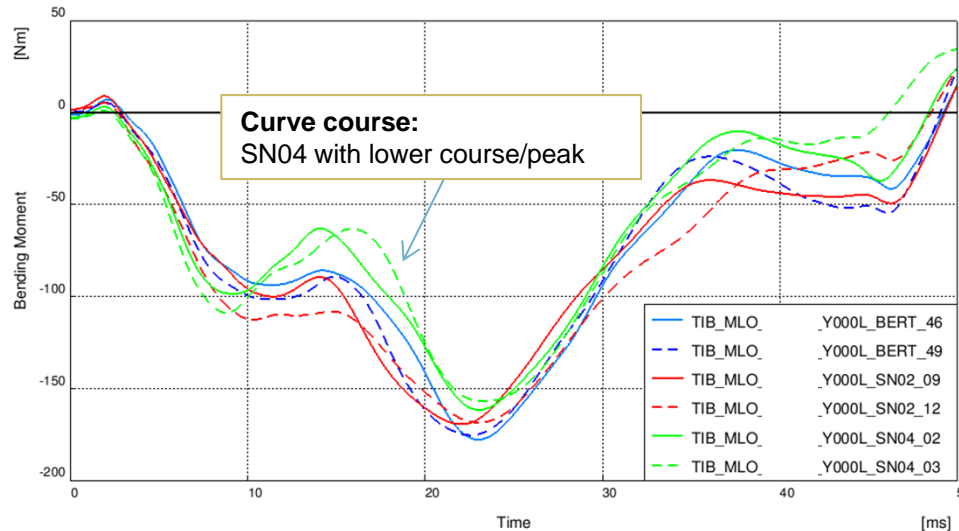
Result comparison of the max.value

Good correspondence (<10%)
-> Industrial-Imp. is comparable with SN04 (Aug.2009)

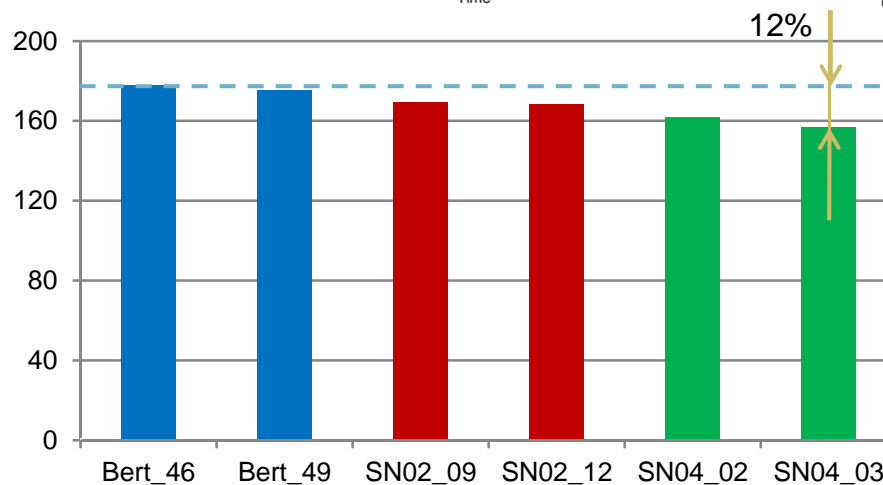
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y0

TIBIA(3) MLO



	TIB MLO	t (max)
Bert_46	177,8	23
Bert_49	175,3	22,6
SN02_09	169,4	22,1
SN02_12	168,5	23
SN04_02	161,6	23
SN04_03	156,8	23,4



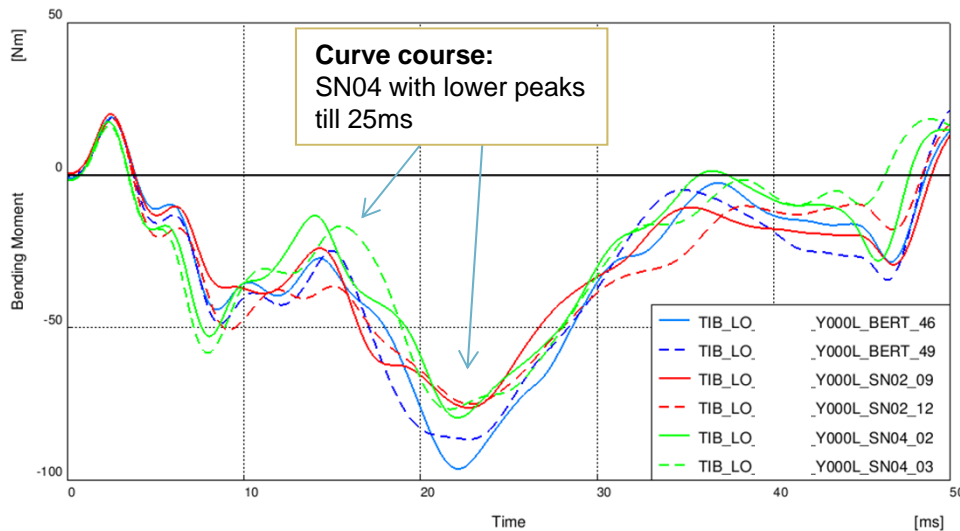
Result comparison of the max.value

High divergence (>10%)
-> Industrial-Imp. shows higher values than SN04 (Aug.2009)

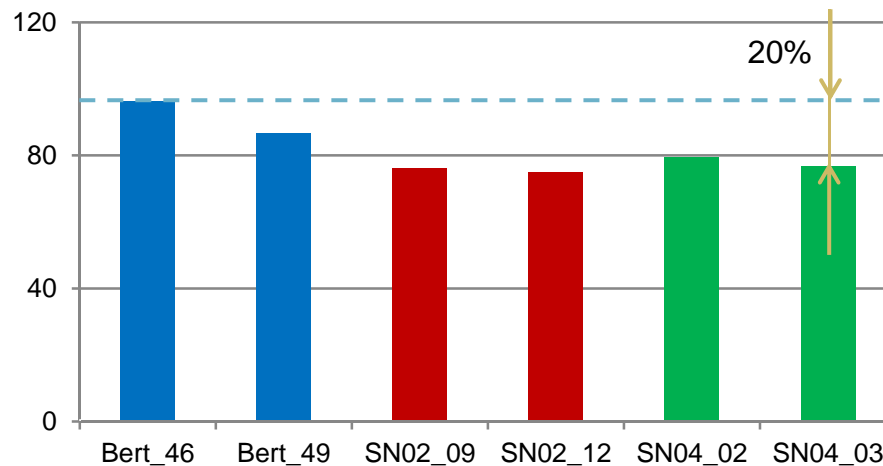
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y0

TIBIA(4) LO



	TIB LO	t (max)
Bert_46	96,3	22,2
Bert_49	86,6	22,8
SN02_09	76,3	22,8
SN02_12	75,1	22,9
SN04_02	79,6	22,1
SN04_03	76,8	21,7



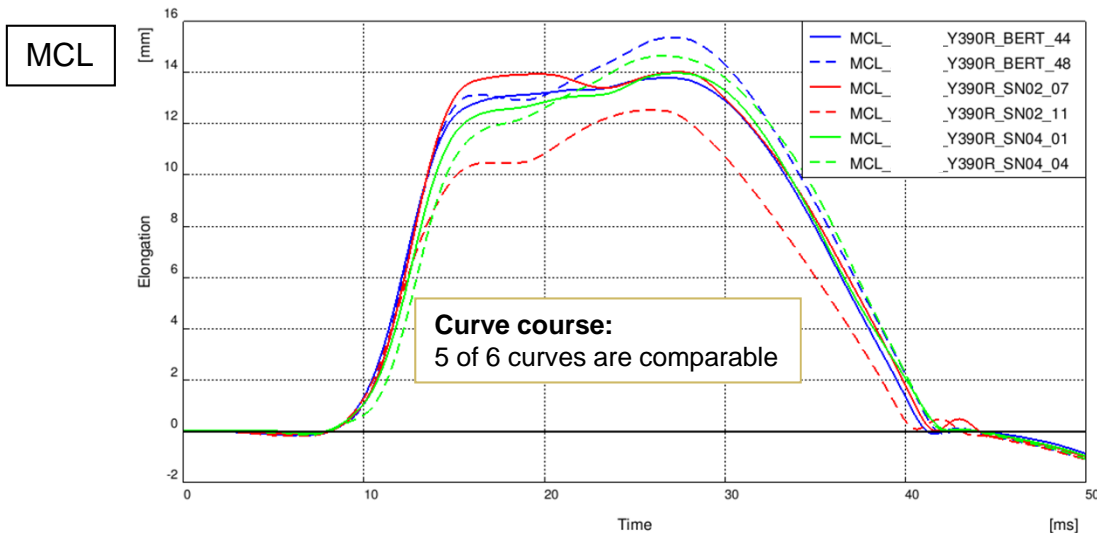
Result comparison of the max.value

High divergence (>10%)
 -> Industrial-Imp. shows higher values than SN04 (Aug.2009)

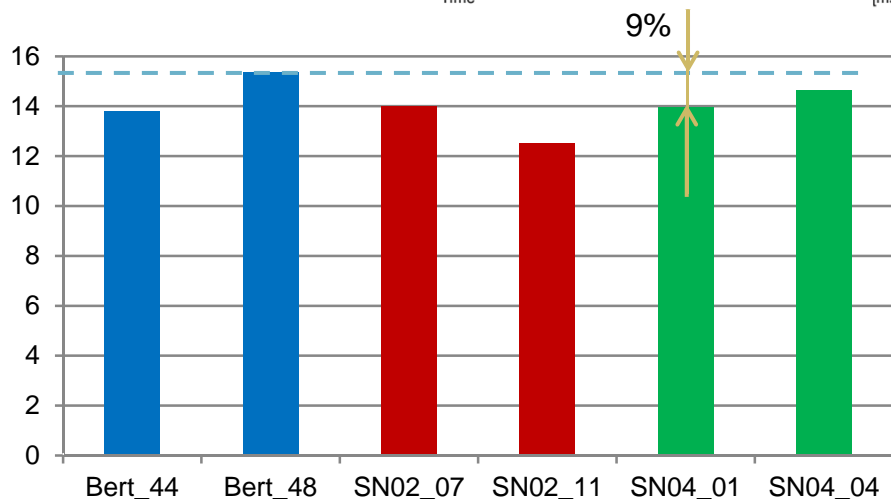
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y390

Test experiences SUV at Y390



	MCL	t (max)
Bert_44	13,79	26,9
Bert_48	15,37	27,2
SN02_07	14,02	27,4
SN02_11	12,54	26
SN04_01	13,98	27,3
SN04_04	14,65	26,6



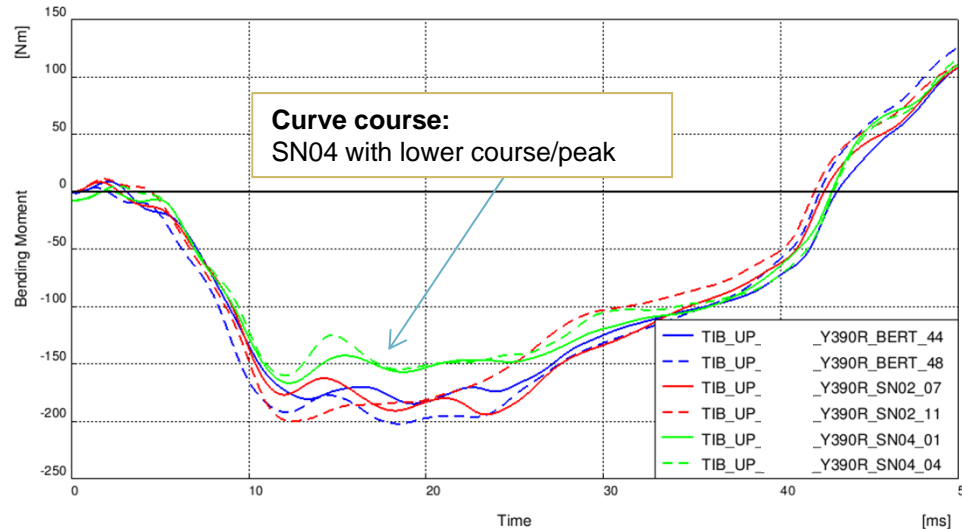
Result comparison of the max.value

Acceptable near 10%
 -> Industrial-Imp. is comparable with SN04 (Aug.2009)

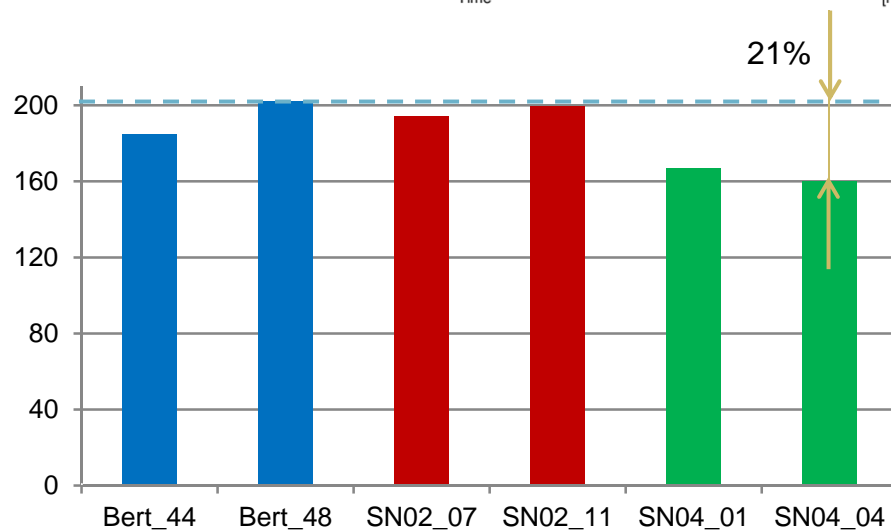
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y390

TIBIA(1) UP



	TIB UP	t (max)
Bert_44	184,7	19,3
Bert_48	202,1	18,4
SN02_07	194,2	23,4
SN02_11	199,8	12,5
SN04_01	166,8	12,3
SN04_04	160,1	12,1



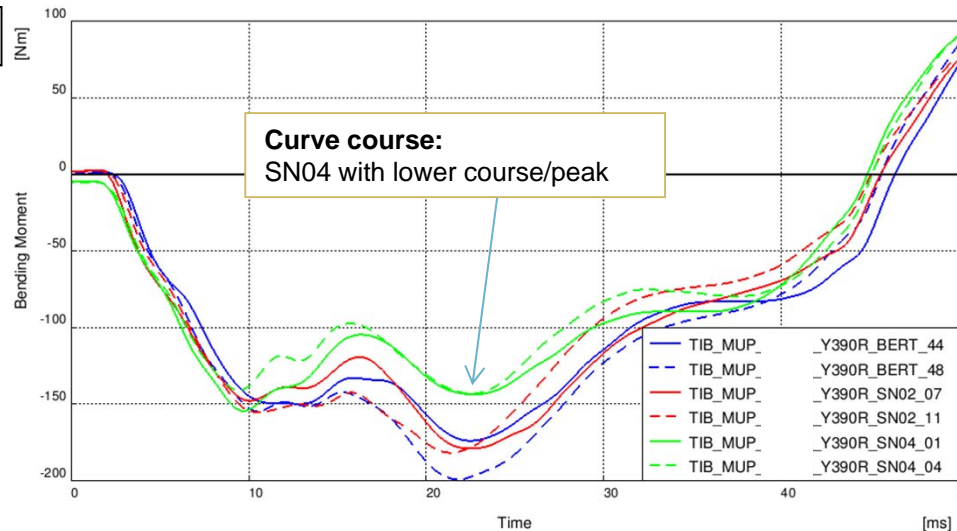
Result comparison of the max.value

High divergence (>10%)
 -> Industrial-Imp. shows higher values than SN04 (Aug.2009)

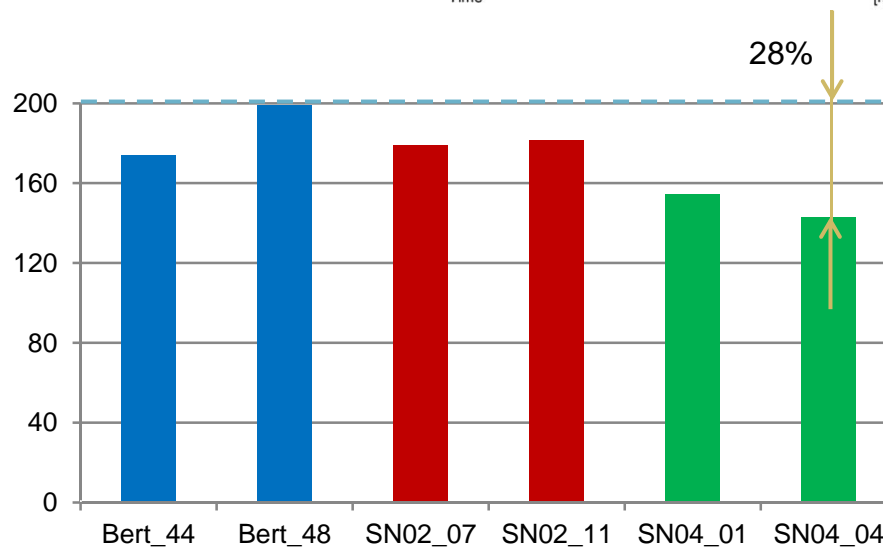
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y390

TIBIA(2) MUP



	TIB MUP	t (max)
Bert_44	173,9	22,5
Bert_48	199,2	21,8
SN02_07	178,9	22,5
SN02_11	181,7	21,4
SN04_01	154,5	9,7
SN04_04	143,2	22,5



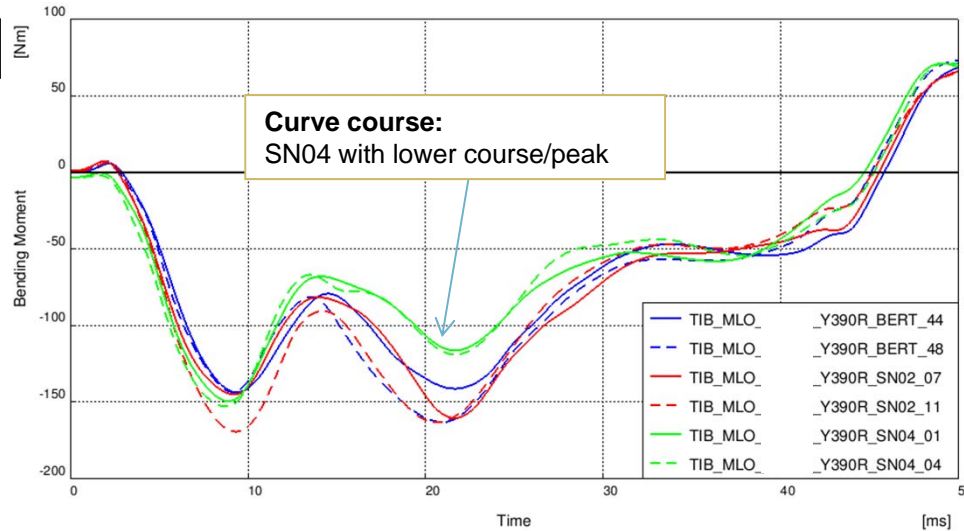
Result comparison of the max.value

High divergence (>10%)
 -> Industrial-Imp. shows higher values than SN04 (Aug.2009)

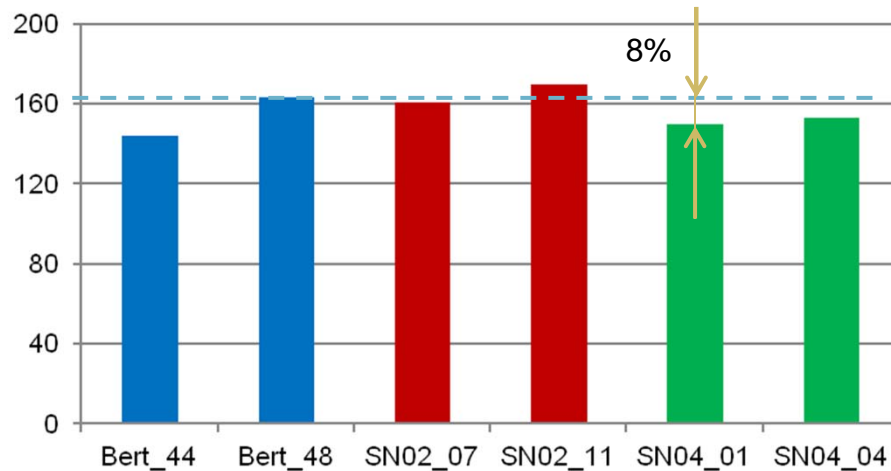
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y390

TIBIA(3) MLO



	TIB MLO	t (max)
Bert_44	143,7	9,4
Bert_48	163,1	20,9
SN02_07	160,4	21,7
SN02_11	169,3	9,3
SN04_01	149,4	8,9
SN04_04	152,8	8,8



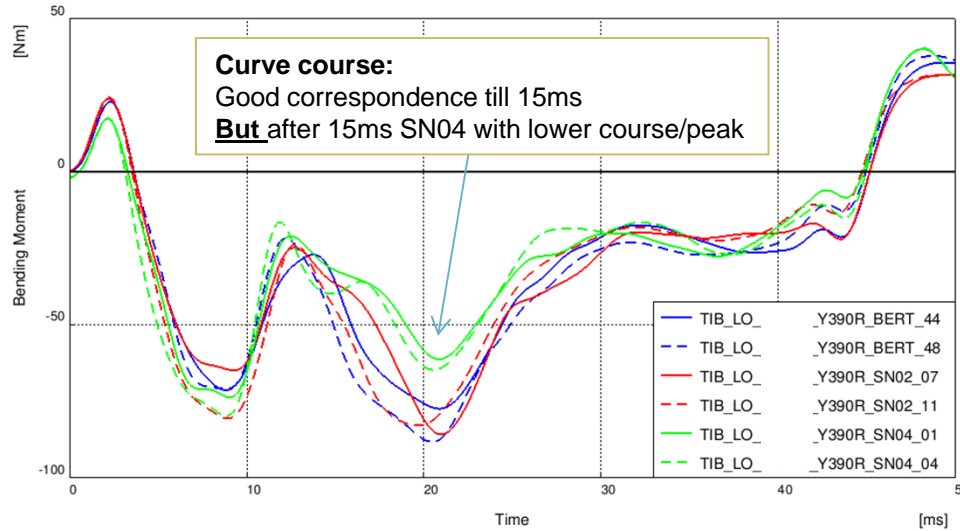
Result comparison of the max.value

Good correspondence (<10%)
 -> Industrial-Imp. is comparable with SN04 (Aug.2009)

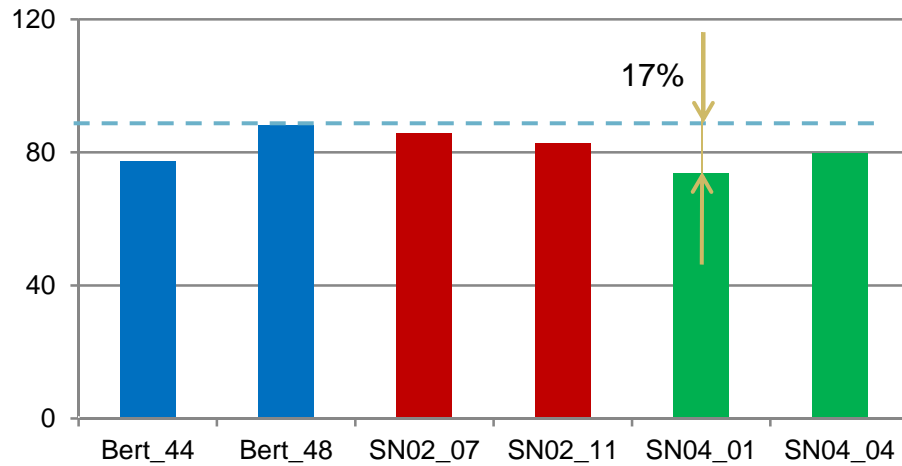
- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Test experiences SUV at Y390

TIBIA(4) LO



	TIB LO	t (max)
Bert_44	77,5	20,9
Bert_48	88,3	20,5
SN02_07	85,9	20,9
SN02_11	82,9	19,7
SN04_01	73,7	9
SN04_04	79,8	8,9



Result comparison of the max.value

High divergence (>10%)
 -> Industrial-Imp. shows higher values than SN04 (Aug.2009)

- Industrial-Imp. (July 2011)
- SN02 (July 2011)
- SN04 (August 2009)
- - - Repetition test

Summary

- Y0 **large family car**: test experiences with SN02/SN04/Industrial
 - MCL: Good correspondence (divergence of 6%)
 - Tibia: **Divergence up to 23%** (Tibia3);
nearly in every Tibia-curve the SN04 has lower course/peak

- Y0 SUV: test experiences with SN02/SN04/Industrial
 - MCL: Values with **divergence of 15%**;
Curve course: SN04 with the lowest course
 - Tibia: **Divergence up to 20%** (Tibia4);
nearly in every Tibia-curve the SN04 has lower course/peak

- Y390 SUV: test experiences with SN02/SN04/Industrial
 - MCL: Acceptable correspondence (divergence near 9%)
 - Tibia: **High divergence up to 28%** (Tibia2);
nearly in every Tibia-curve the SN04 has lower course/peak

- Test results: SN04 Impactor (August 2009) shows lower curve course und values

Overview of results

								max-value of column	229,6	208,8	249,2	275,9	20,2	5,7	15,2
								min-value of column	73,7	91,0	108,6	133,1	12,5	2,3	5,1
								s1 = single test result							
								m3 = mean value of 3 test result /							
No	Flex-GTR No	vehicle type	location	test	ACEA-memb	car No	Legende	Tibia A4	Tibia A3	Tibia A2	Tibia A1	MCL	PCL	ACL	
1	IN01	sedan	Y=0	s5	M1	C1	IN01/sedan/M1/C1	152,70	199,10	223,50	196,60	17,83	5,15	5,35	
2	IN01	sedan	Y=0	s6	M1	C1	IN01/sedan/M1/C1	148,30	201,70	224,20	206,80	19,01	4,92	6,31	
3	SN02	sedan	Y=0	s3	M1	C1	SN02/sedan/M1/C1	147,30	200,90	202,70	192,20	20,19	5,60	5,82	
4	SN02	sedan	Y=0	s4	M1	C1	SN02/sedan/M1/C1	150,60	208,80	222,60	199,60	19,23	4,86	6,04	
5	SN04	sedan	Y=0	s1	M1	C1	SN04/sedan/M1/C1	130,00	156,30	200,60	175,70	18,73	5,53	5,09	
6	SN04	sedan	Y=0	s2	M1	C1	SN04/sedan/M1/C1	126,20	162,40	199,40	185,30	18,99	5,71	5,18	
7	IN01	sedan	Y=340	s5	M1	C1	IN01/sedan/M1/C1	153,90	174,80	182,00	180,80	17,31	5,21	5,33	
8	IN01	sedan	Y=340	s6	M1	C1	IN01/sedan/M1/C1	154,40	178,00	192,30	191,90	17,55	5,02	5,63	
9	SN02	sedan	Y=340	s3	M1	C1	SN02/sedan/M1/C1	151,80	173,00	176,20	181,70	17,66	5,69	5,24	
10	SN04	sedan	Y=340	s1	M1	C1	SN04/sedan/M1/C1	154,20	152,50	183,90	207,40	13,66	4,66	8,35	
11	SN04	sedan	Y=340	s2	M1	C1	SN04/sedan/M1/C1	138,80	164,10	191,70	200,80	15,19	4,57	6,75	
12	IN01	SUV	Y=0	s5	M1	C2	IN01/SUV/M1/C2	96,30	177,80	238,90	259,90	15,69	3,59	9,43	
13	IN01	SUV	Y=0	s6	M1	C2	IN01/SUV/M1/C2	86,60	175,30	249,20	275,90	16,56	3,90	9,16	
14	SN02	SUV	Y=0	s3	M1	C2	SN02/SUV/M1/C2	76,30	169,40	235,90	271,90	15,44	3,21	9,01	
15	SN02	SUV	Y=0	s4	M1	C2	SN02/SUV/M1/C2	75,10	168,50	229,20	272,70	14,42	2,29	9,39	
16	SN04	SUV	Y=0	s1	M1	C2	SN04/SUV/M1/C2	79,60	161,60	231,30	260,20	14,72	3,56	9,39	
17	SN04	SUV	Y=0	s2	M1	C2	SN04/SUV/M1/C2	76,80	156,80	227,40	255,90	14,06	2,53	8,75	
18	IN01	SUV	Y=390	s5	M1	C2	IN01/SUV/M1/C2	77,50	143,70	173,90	184,70	13,79	3,87	8,36	
19	IN01	SUV	Y=390	s6	M1	C2	IN01/SUV/M1/C2	88,30	163,10	199,20	202,10	15,37	3,71	8,27	
20	SN02	SUV	Y=390	s3	M1	C2	SN02/SUV/M1/C2	85,90	160,40	178,90	194,20	14,02	3,51	9,61	
21	SN02	SUV	Y=390	s4	M1	C2	SN02/SUV/M1/C2	82,90	169,30	181,70	199,80	12,54	2,87	7,78	
22	SN04	SUV	Y=390	s1	M1	C2	SN04/SUV/M1/C2	73,70	149,40	154,50	166,80	13,98	4,45	7,98	
23	SN04	SUV	Y=390	s2	M1	C2	SN04/SUV/M1/C2	79,80	152,80	143,20	160,10	14,65	4,49	7,87	
24	IN01	sport	Y=-226	s5	M1	C3	IN01/sport/M1/C3	192,00	95,50	126,40	161,30	15,09	4,03	12,64	
25	IN01	sport	Y=-226	s6	M1	C3	IN01/sport/M1/C3	184,70	105,20	124,90	157,60	15,06	5,61	13,02	
26	SN02	sport	Y=-226	s3	M1	C3	SN02/sport/M1/C3	214,10	130,50	114,00	146,60	14,67	4,29	12,97	
27	SN02	sport	Y=-226	s4	M1	C3	SN02/sport/M1/C3	184,90	98,90	113,30	153,60	15,62	4,61	13,31	
28	SN04	sport	Y=-226	s1	M1	C3	SN04/sport/M1/C3	228,30	142,90	121,70	143,50	14,29	4,45	15,18	
29	SN04	sport	Y=-226	s2	M1	C3	SN04/sport/M1/C3	229,60	134,30	118,90	133,10	13,00	4,51	14,84	
30	IN01	sport	Y=270	s5	M1	C3	IN01/sport/M1/C3	194,40	91,00	121,40	150,60	15,16	4,54	12,27	
31	SN02	sport	Y=270	s3	M1	C3	SN02/sport/M1/C3	194,70	103,70	112,60	153,90	15,33	4,25	13,58	
32	SN02	sport	Y=270	s4	M1	C3	SN02/sport/M1/C3	206,50	119,30	108,60	140,90	14,78	4,22	13,43	
33	SN04	sport	Y=270	s1	M1	C3	SN04/sport/M1/C3	171,40	98,30	121,30	141,10	12,52	4,65	12,79	
34	SN04	sport	Y=270	s2	M1	C3	SN04/sport/M1/C3	196,50	113,40	123,00	139,90	13,01	4,15	14,23	

Divergence > 15%

Certification tests results

State of the impactors

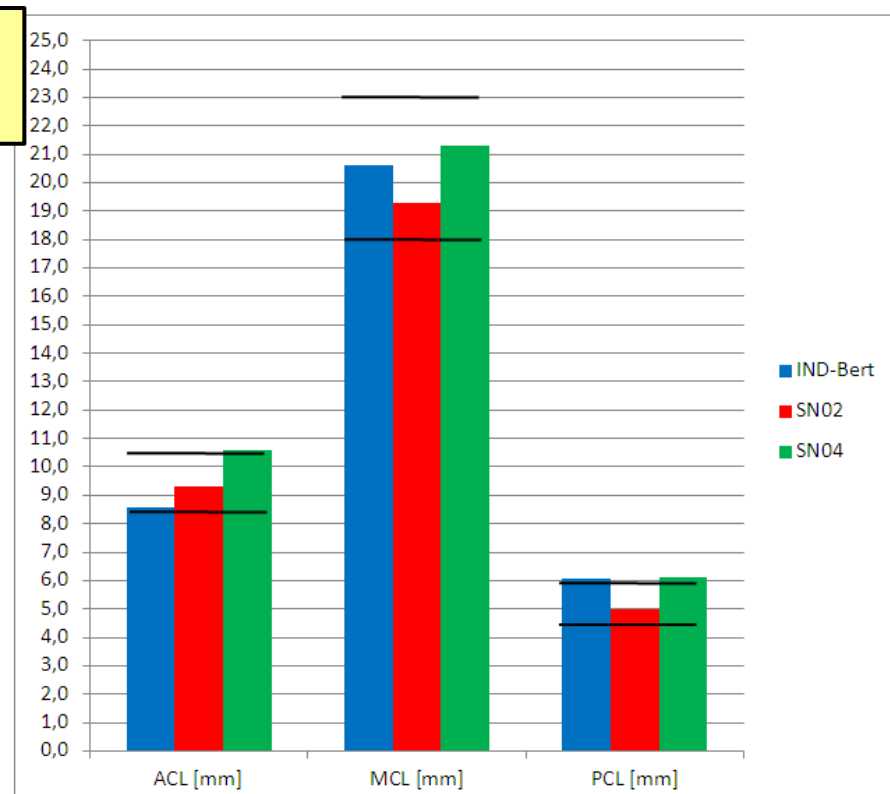
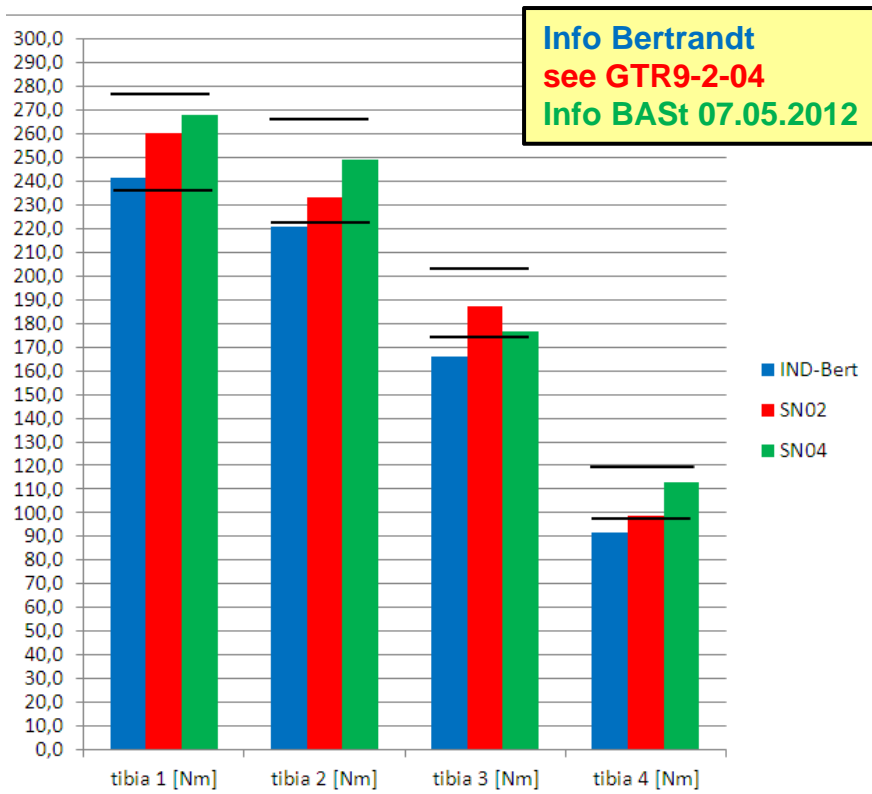
Impactor	rubber sheet	bone material	remarks
SN04	short/long rubber*)	vinyl-ester	info by Humanetics/BASt
SN02	long rubber	poly-ester	
IND-Bertrandt	long rubber	vinyl-ester	

*) certification test were done with long rubber by BASt
vehicle tests were performed with short rubber by OICA

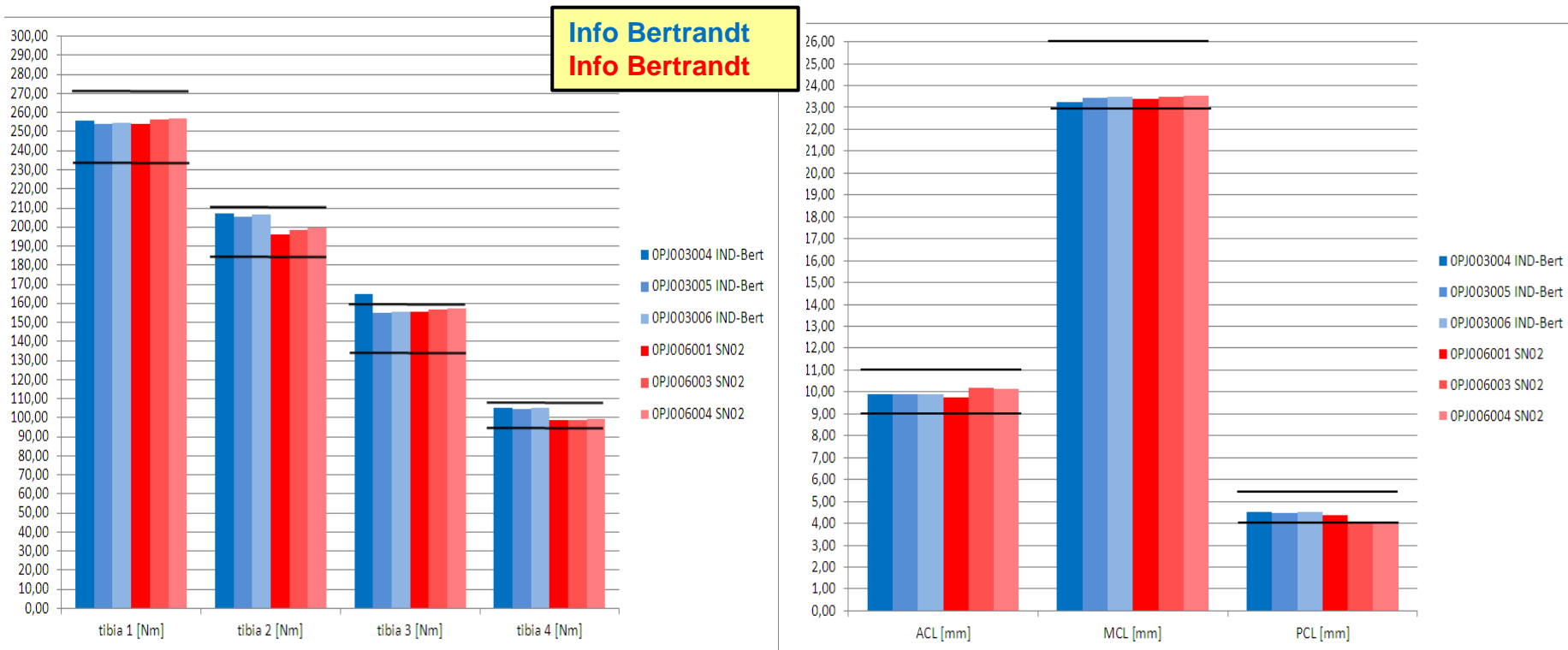
Preliminary summary (11.05.2012)

- Respective pendulum tests for SN04 are missing (to be added if available)
- Production vehicles used are on the same built level – no reason for test differences
- Inverse test results of SN04 don't give a reason for the difference of vehicle tests
- Existence of long/short rubber sheet still to be checked

INVERSE TESTS, FlexPLI				Corridors and inverse test results							
				test	277,0	269,0	204,0	120,0	10,5	23,0	6,0
				house	237,0	223,0	176,0	98,0	8,5	18,0	4,5
Date	test no	impactor	vel [km/h]		tibia 1 [Nm]	tibia 2 [Nm]	tibia 3 [Nm]	tibia 4 [Nm]	ACL [mm]	MCL [mm]	PCL [mm]
06.07.2009	SN04-CALIB-01	SN04	40,46	BASt	267,9	249,4	176,5	112,9	10,6	21,3	6,1
30.06.2011	SN02	SN02	k.A.	BASt	260,3	233,0	187,1	98,8	9,3	19,3	5,0
08.06.2011	OPJ005013	IND-Bert	38,30	Bertrandt	241,4	220,8	166,1	91,9	8,6	20,6	6,1



PENDULUM TEST FlexPLI				Corridors and pendulum test results								
				test	272,0	211,0	160,0	108,0	11,0	26,0	5,4	
Date	test no	impactor	angle [°]	house	tibia 1 [Nm]	tibia 2 [Nm]	tibia 3 [Nm]	tibia 4 [Nm]	ACL [mm]	MCL [mm]	PCL [mm]	
04.07.2011	OPJ006001	SN02	15,0	Bertrandt	254,25	196,37	155,59	98,49	9,73	23,39	4,36	
04.07.2011	OPJ006003	SN02	15,0	Bertrandt	256,11	198,44	156,59	98,88	10,21	23,49	3,96	
04.07.2011	OPJ006004	SN02	15,0	Bertrandt	257,22	199,56	157,44	99,44	10,16	23,53	4,02	
26.05.2011	OPJ003004	IND-Bert	15,0	Bertrandt	255,96	206,98	165,01	105,35	9,90	23,25	4,50	
26.05.2011	OPJ003005	IND-Bert	15,0	Bertrandt	254,19	205,64	154,97	104,55	9,90	23,44	4,45	
26.05.2011	OPJ003006	IND-Bert	15,0	Bertrandt	254,76	206,45	155,77	105,26	9,91	23,50	4,53	



Thank You

For detailed questions please refer to the author Mr. Christian Hess / Audi and Dr. Oskar Ries / Volkswagen.