

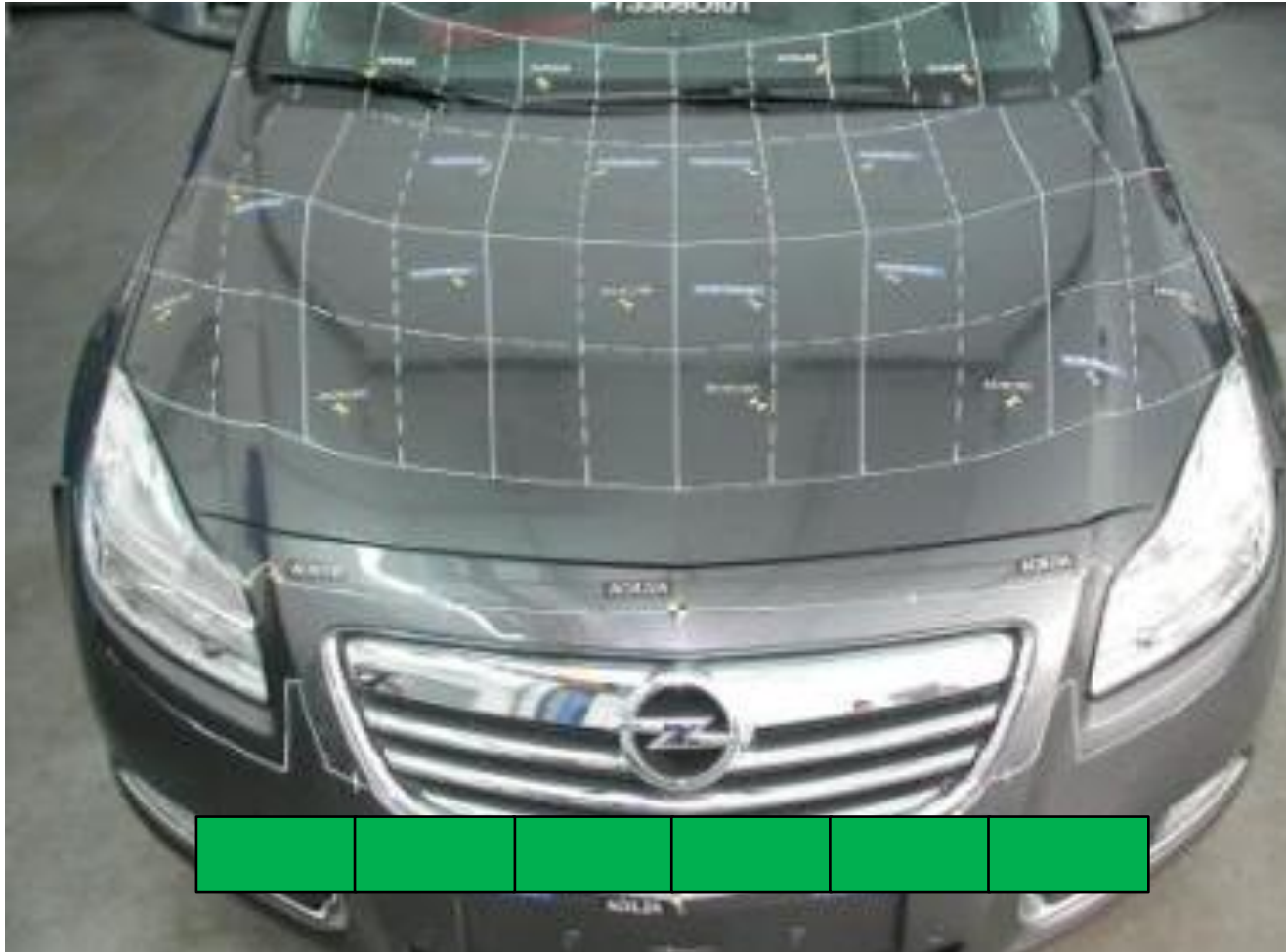


First Experiences of a Manufacturer with FlexPLI

Background

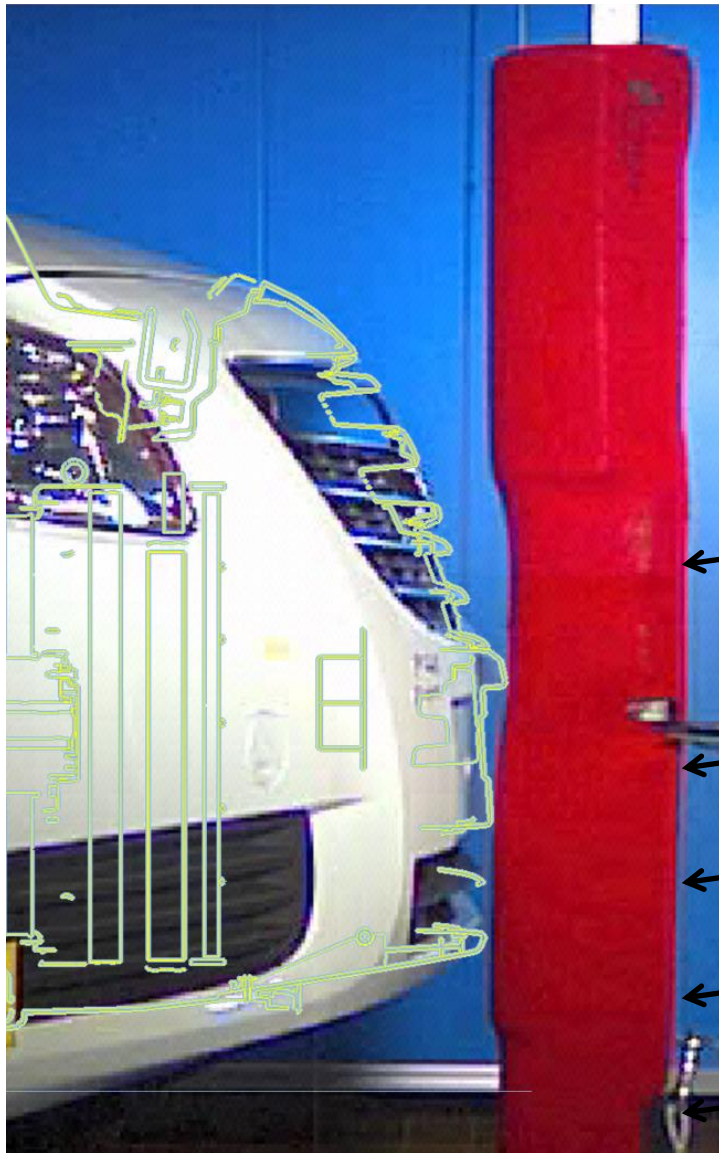
- Tests conducted in-house in late March 2009
- Tests were part of the round robin testing between European manufacturers
- Legform: FlexPLI version GTR, prototype no 1 (conventional data acquisition system with cables for data transfer)
- Test series had to be stopped due to impactor failure (lab-caused)

Lower Leg Performance with TRL LFI (Reference)



- Vehicle meets the criteria of the LFI to bumper test according to existing legislation.
- Vehicle was rated completely **green** in the LFI to bumper tests of Euro NCAP.
- Vehicle is considered to be “pedestrian friendly” in this area.

Lower Leg Performance with FlexPLI Version GTR – Set-Up



**Assessment
Criteria
(preliminary
agreed during
the 7th TEG
meeting)**

**MCL elongation
max. 23 mm**

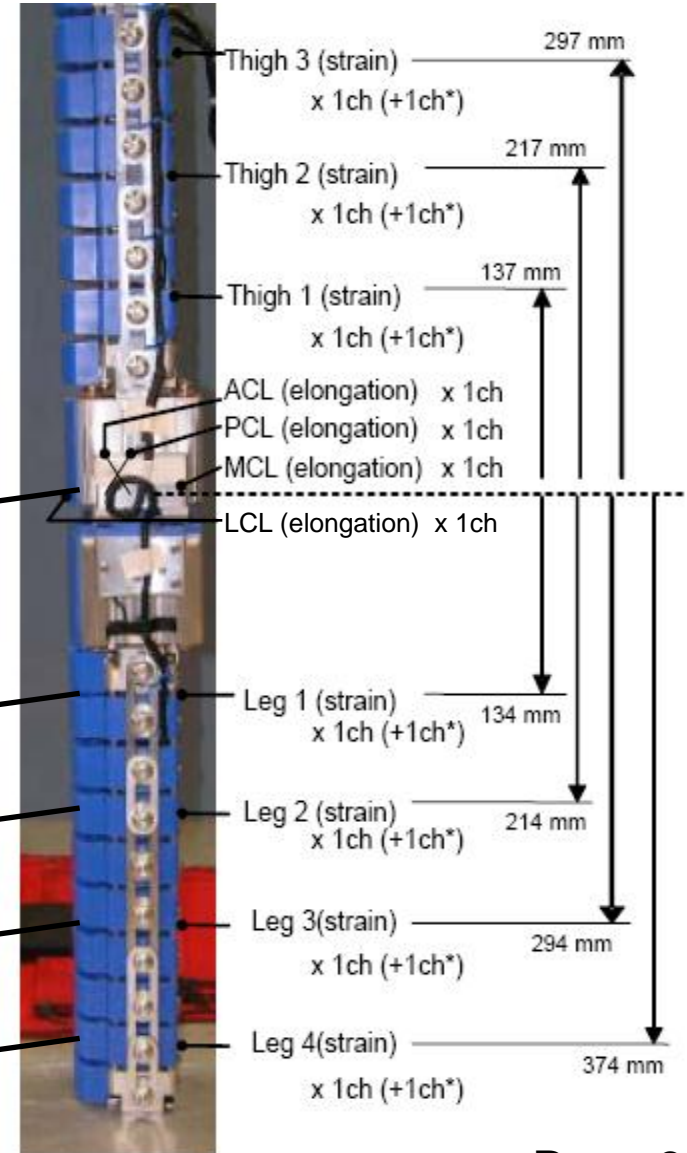
**Tibia Moments
- A1**

- A2

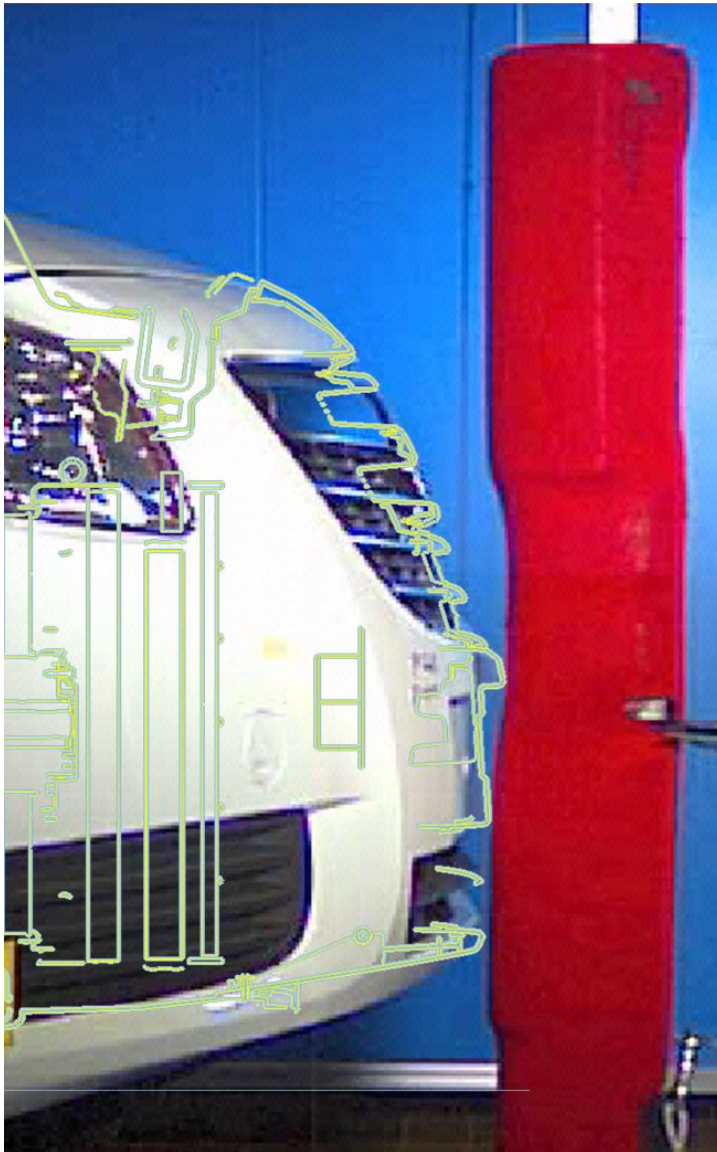
- A3

- A4

max. 318 Nm



Lower Leg Performance with FlexPLI Version GTR – Results



Test No	Position	Test speed (km/h)	MCL	A1	A2	A3	A4
1	1	40,0	Yellow	Green	Red	Red	Green
2	1	40,1	Yellow	Yellow	Red	Red	Green
3	2	40,0	Green	Green	Yellow	Red	Green
4	2	40,5	Green	Green	Red	Red	Green

Acc. to thresholds as pre-liminary agreed in 7th TEG meeting.

MCL
■ > 23 mm
■ 18.4 – 23 mm
■ < 18.4 mm

Tibia A1 – A4
■ > 318 Nm
■ 254.4 – 318 Nm
■ < 254.4 Nm

Considering 20% "safety margin".

Double-Checking vs. TEG ToR

3. Confirmation of TOR for this group

3.2 Task

Task1: Evaluation and Modification of the usability, repeatability, reproducibility, and durability of Flex-PLI as a tool for GTR/PS legform test. And shows the comparison results of all the above issue between the TRL-LFI and Flex-PLI.

- Usability
- Repeatability (component level and assembly level)
- Reproducibility (component level and assembly level)
- Durability (at least until threshold level durability is needed)
- Comparison between TRL-LFI and Flex-PLI for all above issue

Task 2: Review for the Injury Risk Function

Task 3: Technical Feasibility

- Can develop a car which complies the new threshold/requirement
- Evaluation of vehicle design and Evaluation of design process

Task 4: Evaluation of Protection Level provided by the Flex threshold values

Reference:
TEG-005

NO answer can be given on ToR Task 3 so far.



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Conclusions

- Test lab is satisfied with the handling (easy, no wear parts necessary, robust tool)
- Some improvements on design are wished for (no sharp edges, better cable strain-relief)
- Documentation is still missing (manual, repairing instructions)
- Open questions on wear, aging etc.
- So far, no answers can be given on possible design solutions to meet the proposed requirements
- More tests necessary (long-time experience)
- Results can not be generalized so far - experiences of other manufacturers need to be awaited
- Amendment of legislation seems too premature