

# **BASt comments on GTR9-7-13: JASIC position on FlexPLI rebound phase**

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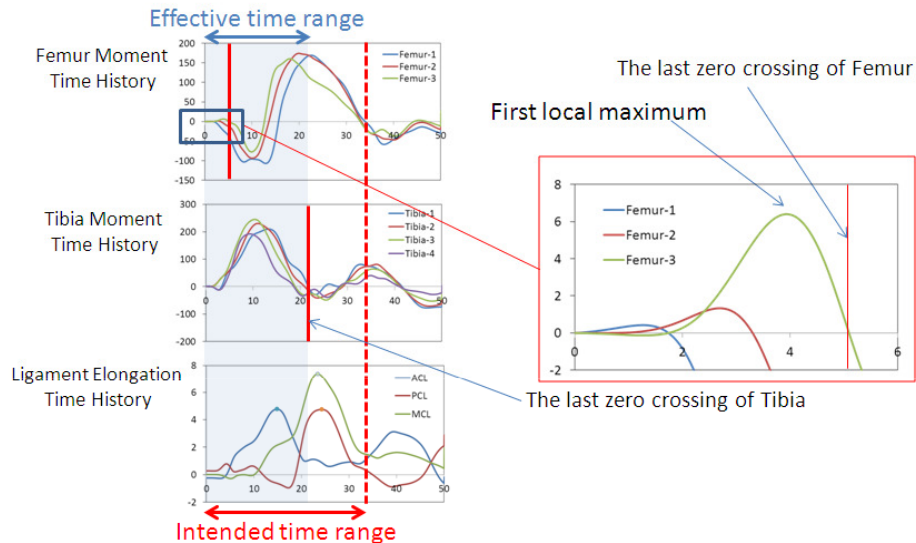
(Federal Highway Research Institute)

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# Issues with BAST Proposal

## Definition of Timing

The BAST definition may result in an unexpected definition of the effective time range



The definition of the first local maximum needs to be modified

First local „maximum“ described within JASIC document is not understood as a maximum but within proposed corridor for FlexPLI vibrations (+/- 15 Nm).

Thus, a modification of the definition is not necessary. However, a small amendment is suggested to take the vibration issue into consideration.

**3.3** The biofidelic assessment interval (BAI) of the flexible lower legform impactor is defined and limited by the time of first contact of the flexible lower legform impactor with the vehicle and the timing of the last zero crossing of all femur and tibia segments after their first local maximum subsequent to any marginal value of 15 Nm, within their common zero crossing phase. The BAI is identical for all bone segments and knee ligaments. In case of not all bending moments having a zero crossing during the common zero crossing phase, the time history curves are shifted downwards until all bending moments are crossing zero. The downwards shift is to be applied for the determination of the BAI only.

## Issues with BASt Proposal

- Terminology – Biofidelic Assessment Interval (BAI)
  - JASIC recognizes the biofidelity issue of the exaggeration of the secondary peak of the tibia bending moment
  - The word 'Biofidelic' is recommended to be eliminated – 'Assessment Interval' would be supported

One of the major advantages of the FlexPLI in comparison to the EEVC lower legform impactor was understood as its superior biofidelic properties.

Therefore, the elimination of the word „biofidelic“ within the BAI definition is not comprehensible.

The limited biofidelic properties of the FlexPLI in some rare cases during short time periods should not overlay the altogether very humanlike behaviour.

Thus, the word „biofidelic“ should not be removed from the definition.