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(44th GRSP, 10-13 December 2008,
agenda item 2(a))

Transmitted by the expert from Japan

Status Report on Flexible Pedestrian Legform Impactor Technical Evaluation Group (Flex-TEG) Activities

Atsuhiro Konosu
Chairperson of Flex-TEG, Japan

Latest Flex-TEG Activities (7th Flex-TEG meeting)

Participants of the 7th Flex-TEG meeting (8 Dec. 2008, BASt, Germany)

A. Konosu（Flex-TEG chairperson/J-MLIT/JARI）
B. Been（Flex-TEG secretariat/FTSS-Europe）
O. Zander (BASt)
D.U. Gehring and P. Lessmann (BGS)
O. Ries (ACEA/VW)
R. Fleischhacker (ACEA/Porsche)
T. Kinsky and B. Dreyer (ACEA/Opel)
A. Sipido (ACEA/Ford)
I. Imaizumi (JAMA/HONDA)
W. Liebers (TUV)
K. Wolff (Continental)
J.C. Kolb (Berbraudt)
M. Winkler (MESSRING)
D. Martin (DTS)
T. Inoue (JASTI)
R. Kant and S.J.P. Jansen (FTSS-Europe)

Total: 19 persons

Main Agenda of the 7th Flex-TEG meeting

5. Flex-GTR-prototype development
   - 5.1. FTSS Development Report
   - 5.2. Japan (J-MLIT, JAMA, and JARI) Evaluation Tests Report
   - 5.3. MESSRING Proposal to use ISO MME codes for the Flex Measurements

6. Dynamic Calibration Method for Flex-GTR-prototype
   - 6.1. FTSS Report (Pendulum type)
   - 6.2. BASt Report (Impact type)

7. Injury Criteria
   - 7.1. JAMA Proposal (MCL)
   - 7.2. JAMA Proposal (Tibia)
   - 7.3. BASt Proposal (ACL, PCL, and MCL)

8. Evaluation Test Schedule for the Flex-GTR-prototype
   - 8.1. JAMA Proposal (Test Schedule)

9. DRAFT of PS-gtr (gtr 9) Phase 2 using Flex-PLI requirements
   - 9.1. J-MLIT DRAFT Proposal (base)

10. Working schedule for the Flex-TEG
    - 10.1. J-MLIT Proposal

11. Future action plans

Latest Flex-TEG Activities (7th Flex-TEG meeting)

5. Flex-GTR-prototype development

- 5.1. FTSS Development Report
- 5.2. Japan (J-MLIT, JAMA, and JARI) Evaluation Tests Report
- 5.3. MESSRING Proposal to use ISO MME codes for the Flex Measurements

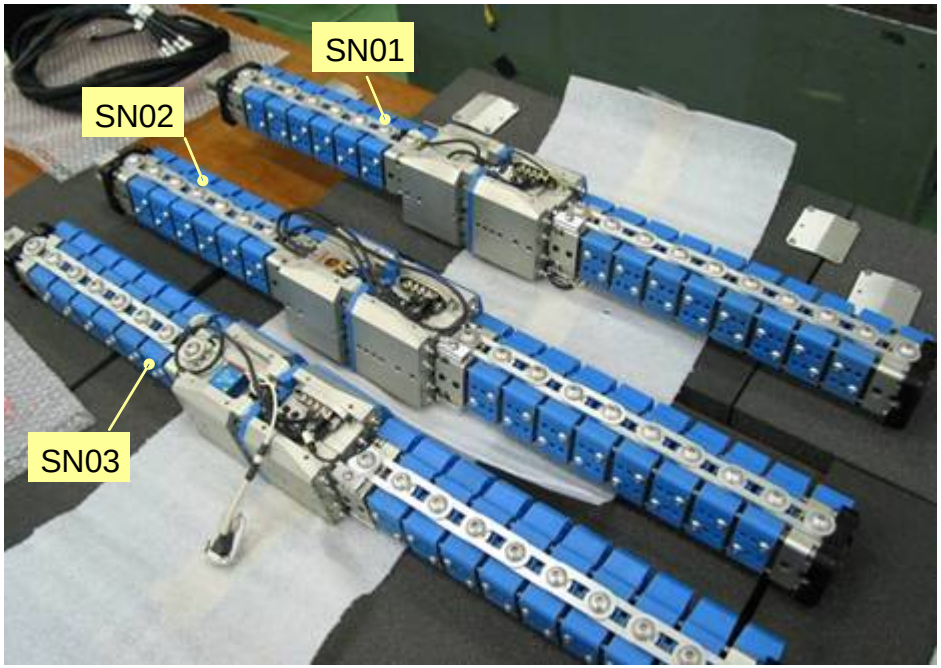
Flex-GTR-prototype (SN01, SN02, SN03)

Measurement systems

SN01: Off-board DAS

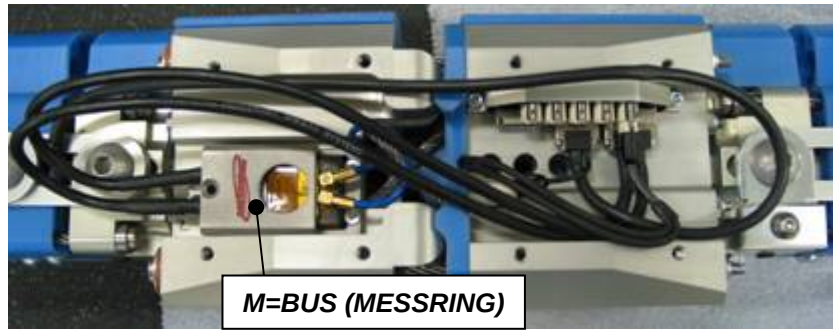
SN02: Can select On-board DAS (M=BUS) or Off-board DAS

SN03: Can select On-board DAS (Slice) or Off-board DAS

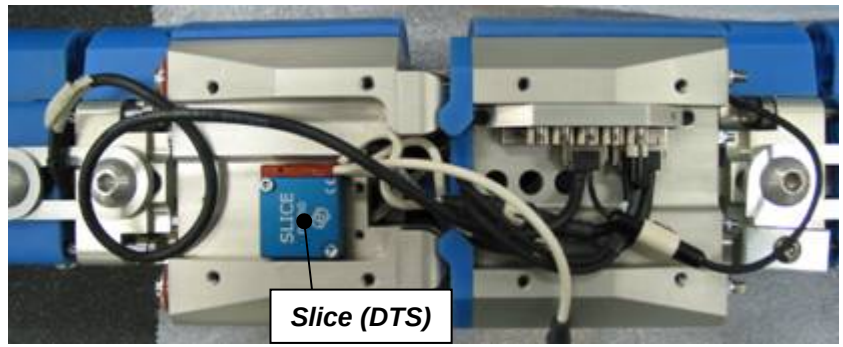


Onboard DAS

SN02: Can select to use On-board DAS (M=BUS)



SN03: Can select to use On-board DAS (Slice)



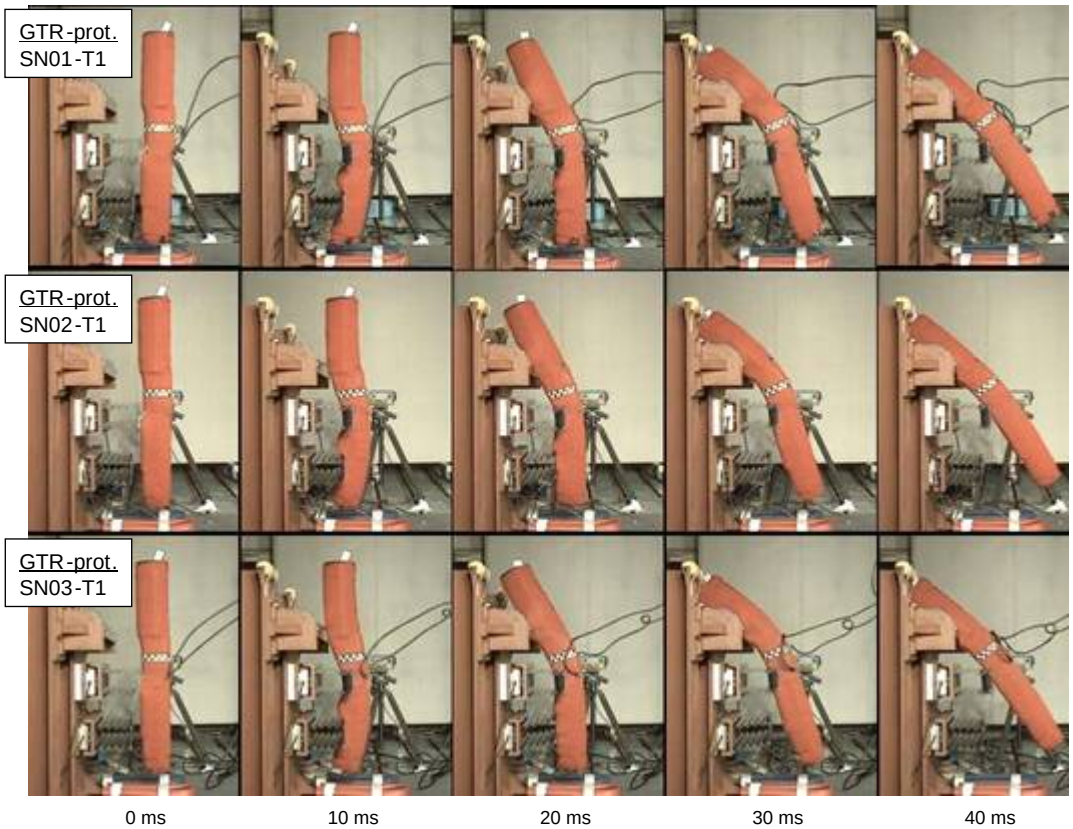
- **Three Flex-GTR-prototype ware developed (SN01, SN02, and SN03).**
- **User can select to use on-board DAS (M=BUS or Slice) for SN02 and SN03.**

Latest Flex-TEG Activities (7th Flex-TEG meeting)

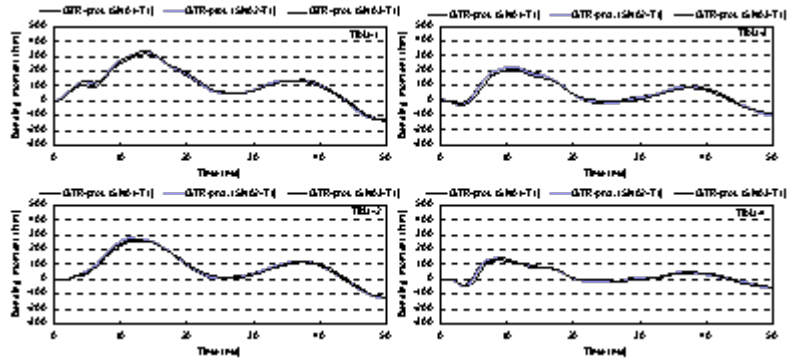
5. Flex-GTR-prototype development

- 5.1. FTSS Development Report
- 5.2. Japan (J-MLIT, JAMA, and JARI) Evaluation Tests Report
- 5.3. MESSRING Proposal to use ISO MME codes for the Flex Measurements

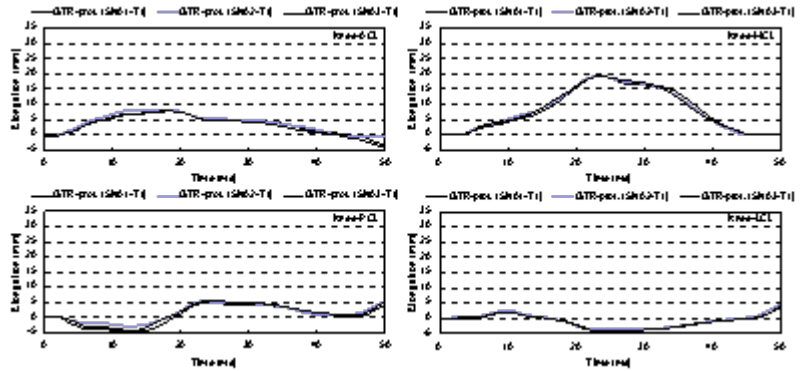
Japan Evaluation Test Results (e.g. Reproducibility)



Tibia-1, -2, -3, -4 output



Knee-ACL, PCL, MCL, LCL output



- Reproducibility & Repeatability of the Flex-GTR-prototypes, and Comparison with Flex-GT (previous) output are conducted by Japan (J-MLIT, JAMA and JARI collaboration).
- Evaluation tests in Europe are proposed to be conducted from Jan. to Apr. in 2009.

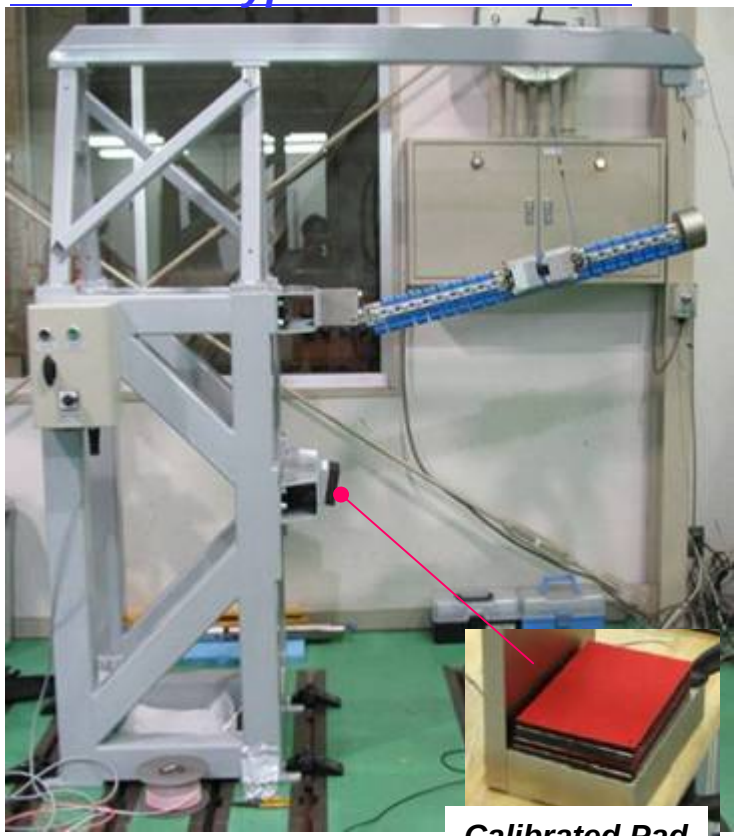
Latest Flex-TEG Activities (7th Flex-TEG meeting)

6. Dynamic Calibration Method for Flex-GTR-prototype

6.1. FTSS Report (Pendulum type)

6.2. BASt Report (impact type)

Pendulum type calibration test

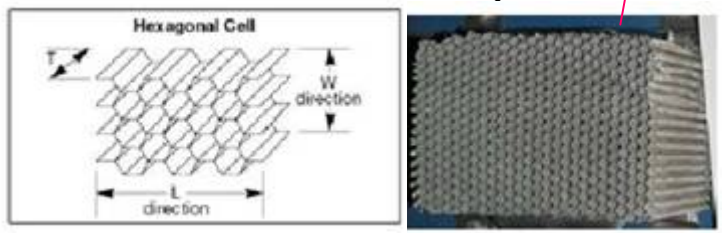


Calibrated Pad

Impact type calibration test

Flex-GT inverse testing

Honeycomb



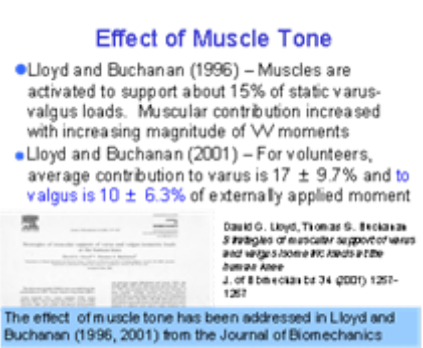
- TEG member discussed which is better test method for the Flex-GTR calibration.
- TEG member are going to continue this discussion by the next TEG meeting and will decide which shall be adopted for the Flex-GTR calibration test method.

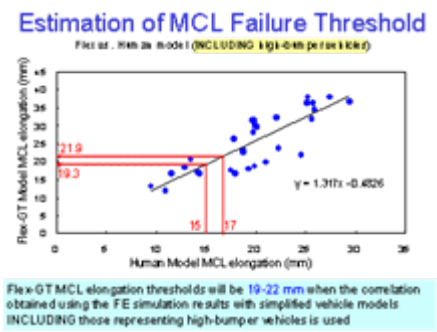
Latest Flex-TEG Activities (7th Flex-TEG meeting)

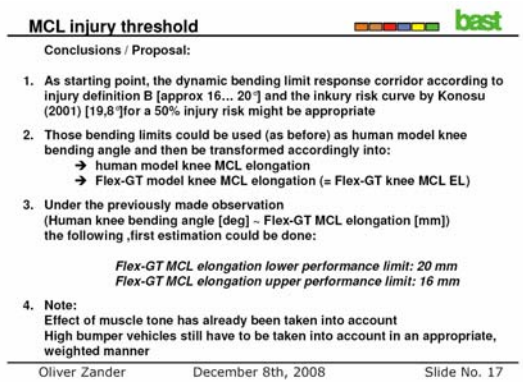
7. Injury Criteria

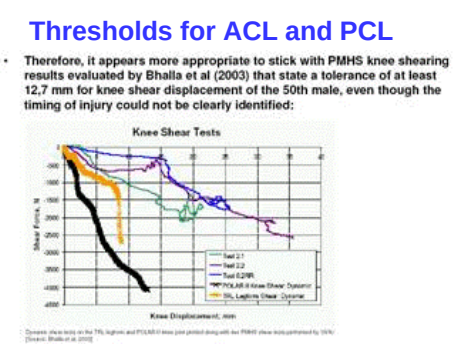
7.1. JAMA Proposal (MCL), 7.2. JAMA Proposal (Tibia)
7.3. BASt Proposal (ACL, PCL, and MCL)

- **MCL: JAMA proposal is 23 mm. TEG agreed after some discussion that the muscle effects need to be considered for the Flex-GTR. TEG also agreed that the criterion needs to consider all vehicle categories in the scope of the GTR, such as e.g. high-bumper vehicles. The muscle effect explanations of JAMA are accepted by TEG. However, for the high-bumper effect explanations of JAMA are required more detailed information from BASt before to adopt.**
- **MCL: BASt proposal was presented as 16 mm (upper performance limit) and 20 mm (lower performance limit), while the high bumper vehicles still need to be included in an appropriate, weighted manner.**
- **Tibia: JAMA proposal, 318Nm, had no objection from the TEG members.**
- **ACL and PCL: BASt proposal, 12.7 mm, for the time being agreed by TEG for monitoring purposes only. This threshold value still needs to be discussed and decided whether being introduced for homologation purpose at the next meeting.**





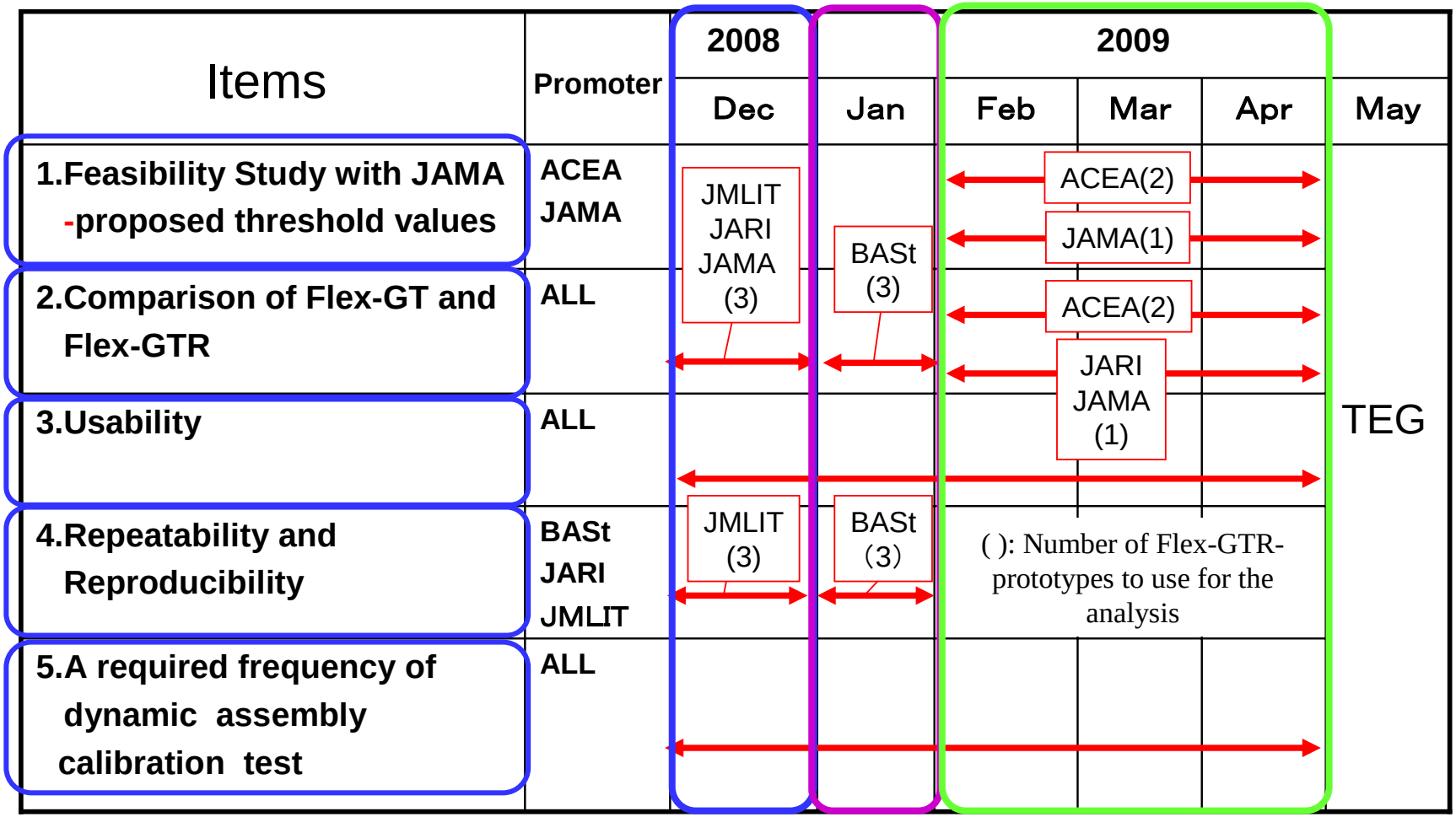




Latest Flex-TEG Activities (7th Flex-TEG meeting)

8. Evaluation Test Schedule for the Flex-GTR-prototype

8.1. JAMA Proposal (Test Schedule)



- TEG assessed the test schedule as very challenging.
- However, if possible TEG member will meet the proposed timing.

Latest Flex-TEG Activities (7th Flex-TEG meeting)

9. DRAFT of PS-gtr (gtr 9) Phase 2 using Flex-PLI requirements

9.1. J-MLIT DRAFT Proposal (base)

J-MLIT Draft Proposal (basic idea)

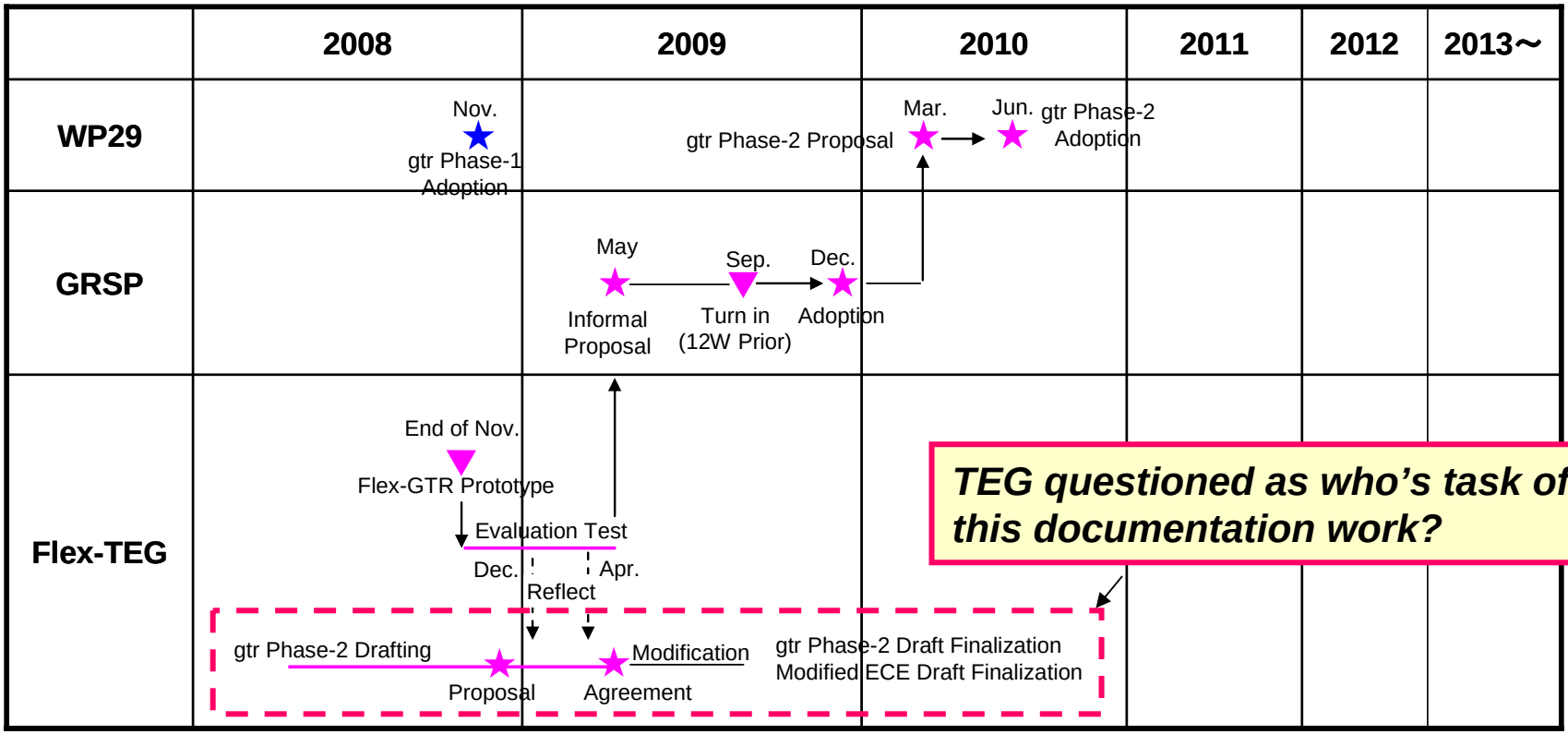
- **J-MLIT showed their DRAFT Proposal on the PSgtr (gtr9) phase 2 using Flex-PLI requirements to share this information with the TEG members.**
- **Some of TEG members stated that the PS gtr Phase-2 Draft making is out of TEG task. TEG chair will confirm that at the 44th GRSP meeting.**

Latest Flex-TEG Activities (7th Flex-TEG meeting)

10. Working schedule for the Flex-TEG

10.1. J-MLIT Proposal

Flex-TEG Working Schedule (J-MLIT proposal)



- **TEG assessed the J-MLIT proposed schedule as very challenging.**
- **Some TEG members even feel that it will not be possible to finish all tasks by May 2009 GRSP since the test are just finished at that time in best case.**

Latest Flex-TEG Activities (7th Flex-TEG meeting)

11. Future action plans

By the end of December, 2008

- **TEG members will discuss the JAMA Proposed Test Schedule and will give their discussion results to the TEG members by end of Dec. 2008.**

Preferably by the end of April, 2009

- **Flex-TEG members will conduct evaluation tests with the Flex-GTR-prototypes.**
- **Flex-TEG members will further discuss the open issues identified above.**

May, 2009

★ **8th Flex-TEG meeting**

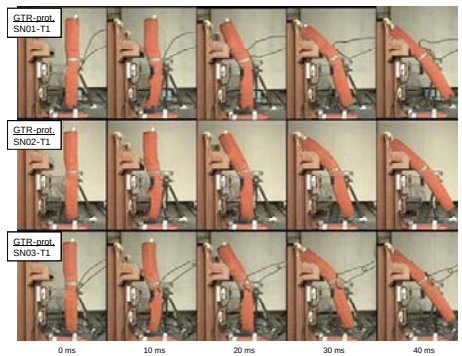
⇩ ***Submit status report***

★ **45th GRSP meeting**

JAMA Proposal (Test Schedule)

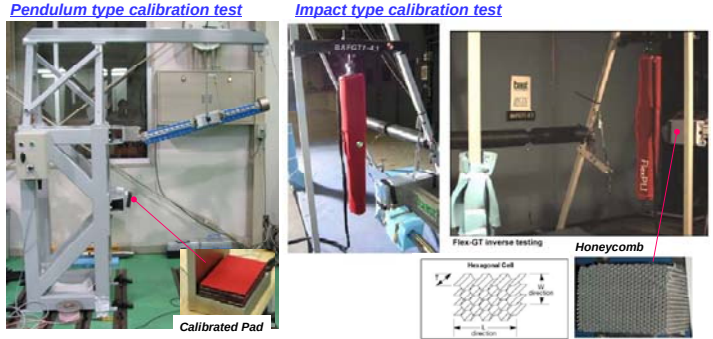
Items	Promoter	2008 Dec	2009 Jan	2009 Feb	2009 Mar	2009 Apr	2009 May
1.Feasibility Study with JAMA -proposed threshold values	ACEA JAMA	JMLIT JARI JAMA (3)	BASt(3)	ACEA(2) JAMA(1)	ACEA(2) JARI JAMA(1)		TEG
2.Comparison of Flex-GT and Flex-GTR	ALL						
3.Usability	ALL						
4.Repeatability and Reproducibility	BASt JARI JMLIT	JMLIT(3)	BASt(3)				
5.A required frequency of dynamic assembly calibration test	ALL						

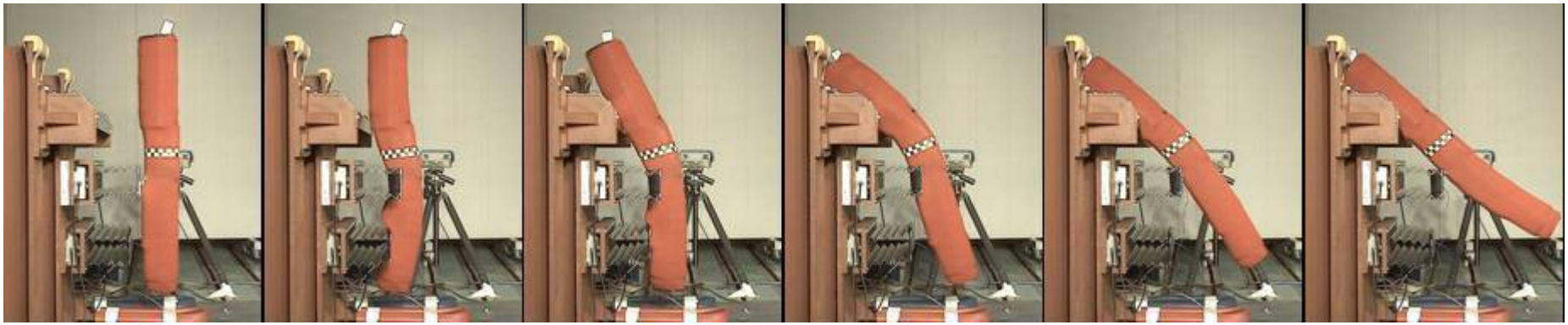
Conduct evaluation tests



Analysis on the dynamic assembly calibration tests

Pendulum type calibration test *Impact type calibration test*





Thank you for your attentions!