

Progress Report

EVS TF No.6 (SOC)

19 Nov. 2014

Namsan Ⅲ, GRAND HYATT SEOUL Hotel
322 Sowol-ro, Yongsan-gu, Seoul 140-738
Republic of Korea

JASIC

Status

- Jan. 2014: Exchange Initial comments for Japan proposal at 3rd EVS (Tokyo meeting) by e-mail
→ make clear the discussion points for SOC issue
- 11th March 2014: 1st Teleconference of TF
- 21st March 2014: 1st Face to Face Meeting at OICA, Paris. We have 2 presentations from OICA and JRC.
- 25th April 2014: 2nd Teleconference with co-sponsors on progress of TF
- 13th May 2014: Presentation of TF progress report in the 5th GTR-EVS meeting
- After the 1st F2F @ Paris, OICA developed and distributed new proposal for TF6 members
- Discussed by e-mail and We have some questions to OICA's proposal.
- 16th, Oct. 2014: 2nd F2F meeting on all TF meeting at ACEA, Brussels. We have discussion based on OICA's new proposal .
- 3rd Nov. 2014: Report the progress of TF at teleconference with co-sponsors.
- 19th Nov. 2014: Presentation of TF progress report in the 6th GTR-EVS meeting

Scope

TF agreed on 1st F2F Meeting in Paris. below;

- **Target SOC range**

“Normal operating SOC range” means the range between the lowest and highest SOC as defined by the manufacturer.

- **SOC level at Testing**

The principle to aim to adjust at the highest SOC reasonably possible.

Discussion point

- Clearly describe the procedure to confirm that the SOC before conducting the test is maintained within the allowable range compared to the SOC charged to its highest level in normal operation range during the preparation process.

Discussion at 2nd F2F, Brussels

Based on OICA's new proposal .

- JRC summarized several proposed SOC adjusting method and question to OICA's proposal. (Presentation file : EVSTF-01-14e.pdf)
- OICA answered all of JRC's questions by EVSTF-01-15e.docx.
- Scania pointed out the need for test procedure for HEV which use only narrow range near 50% SOC. In that case, the SOC may not be significant enough to make difference compare to wide range SOC usable vehicles (ex. EV, PHEV and part of HEV).

For further consideration

- After discussion, TF leader proposed revised draft which accounts all relevant issue to resume the stalled discussion. (EVSTF-01-16e.docx)
- TF agree with this TF leader proposal as base draft for future discussion on this TF.
- TF members will provide comments to this leader proposal by end of Dec. 2014. TF agree with next TF6 F2F meeting will have Jan. to March 2015.
- TF is aim for final agreement at next F2F meeting.

Procedures for SOC adjustment -1

TF Leader proposal

- (1) The adjustment of SOC shall be conducted at an ambient temperature of $[20 \pm 10^{\circ} \text{ C}$ vehicle-based test and $20 \pm 5^{\circ} \text{ C}$ for component-based test.]

Cont.

Procedures for SOC adjustment -2

TF Leader proposal

- (2) During the preparation of the test, the SOC of the tested-device shall be adjusted according to one of the following procedures as applicable:
- (a) For a vehicle with a REESS designed to be externally charged, the REESS shall be charged to the highest SOC in accordance with the procedure specified by the manufacturer for normal use until the charging process is normally terminated.
 - (b) For a vehicle with a REESS designed to be charged only by an energy source on the vehicle, the REESS shall be charged to the highest SOC which is reasonably achievable with normal operation of the vehicle. The method of charging the REESS shall be defined by the manufacturer.
 - (c) In case that the REESS or REESS sub-system is used as the tested-device, the tested-device shall be charged to the highest SOC in accordance with the procedure specified by the manufacturer for normal use or for manufacturing, service or maintenance until the charging process is normally terminated in accordance with the applied charging procedure or to a SOC not less than 90 per cent of the maximum normal operating SOC defined by the manufacturer for specific configuration of the tested-device.

Cont.

Procedures for SOC adjustment -3

TF Leader proposal

- (3) After the adjustment of the SOC according to paragraph 1 above, the test shall be started within [48 hours] subject to taking all reasonable and practical steps to ensure the initial SOC, otherwise an appropriate verification shall be made to confirm that the SOC is maintained not less than [90 %] of the initial SOC, e.g. by using OCV-SOC curve of the REESS, etc.

If it is difficult to verify the SOC, the REESS shall be charged by external source to the maximum operating SOC in accordance with the procedure specified by the manufacturer before conducting the test.