

<p>Report of the ad-hoc GRRF meeting on EVSC London 11 October 2005.</p>

Chairman: Mr. Laszlo PALKOVICS

Secretary Mr. Peter Koleszar

Participants: see list of participants **EVSC05-36.**

Associated documents: *EVSC04-01 Rev 5 Amendment to R13*
EVSC05-35 Rev1 Simulation tool

Meeting start: 9:30, 11 October 2005

The chairman opened the discussion, reviewed the agenda to come to a more consistent program.

Mr. Yarnold reviewed the results of the last GRRF meeting. Accidents of heavy goods vehicles don't only cause severe injuries and huge financial damage, but also have a big impact on the traffic flow: there are often congestions caused by these accidents. Statistics show that installation of an EVSC system has good influence to all of these problems. EC sees the EVSC issue very important – EVSC is one of the main means of reducing the number of accidents in Europe and all over the world, and as such, it is warmly welcome in truck and passenger car areas. It is already recognized, that definition of EVSC and its design/performance/etc criteria is a heavy challenge, also the testing of an EVSC system. Computers may have an important role in this testing, and in UK virtual testing is also an issue to be discussed. Mr. Yarnold asked the participants to be creative to establish the means of definition and testing, so EVSC can become more widespread and further enhance the safety of the vehicle.

Mr. Wilde as the host of the meeting performed a short introduction of the venue, talked about some administrative issues.

Roll call of delegates has been done: 2 new members were introduced, Mr. Ruijs and Mr. Knowles.

The agenda has been approved.

The protocol of the last meeting (Stuttgart) has been approved.

Dr. Palkovics summarized the last GRRF meeting: While the French, Japanese and US governments expressed concern regarding the appropriateness of amending R13, with regard to EVSC, at this time and the lack of a detailed test, other delegations saw the need for an amendment now. US government: knowing the positive effects of EVSC systems tries to give a mandation of EVSC for all vehicle classes. The working group should concentrate only on HGV, since they are far more complicated than passenger cars, especially the articulated one, and those with high centre of gravity. The chairman also asked the delegates to put more emphasis on computer simulations.

Mr. Ruijs summarized to the working group his proposed document for vehicle dynamic simulation EVSC05-35.

Comments to Mr. Ruijs' proposal:

Dr. Palkovics, Dr. Heess: simulation validation: perform within 5% compared to real test is a very difficult to achieve.

Dr. Palkovics: to control what is mandatory, there should be an appendix put for simulation suggestions.

Dr. Heess: The number of parameters used is too high; already the static case is too complex. Usually the simulation is already implemented in the development process to reduce the number of practical tests. Because of the high number of these parameters the identification is difficult; there is a practical difficulty to handle all the possible cases.

Dr. Palkovics: worst case or representative vehicle selection: real vehicle test would mean the same problems, since the same tests should be executed with the same representative vehicles.

Dr. Straub: Difficult to prove the tolerances between the real and simulated tests; How to prove with a specific vehicle combination, that other vehicle also act the same way.

Mr. Brett: the future framework directive of the EC on type approval of vehicles already contains a basic specification for the simulation tools; those should be obeyed in order to have it accepted.

Dr. Straub: How to approve a simulation method?

Mr. Brett: The proposal for the dynamic simulation should be included in the list of the future framework directive.

Mr. Ross, Mr. Heess, Mr. de Haes, Mr. Brett: questioning the following process: validating, revalidating, changing the vehicle or modifying the installed EVSC system...

Mr. Ruijs: 2 steps for the demonstration: First is the validation of the simulation. If this is passed, second step is demonstration of the EVSC on a specific vehicle.

Dr. Palkovics: validation of a model is as complex as a practical vehicle test. That is why at least definition of parameters should be done before validation, even if this is also difficult to do. Also a model-class definition should be done in advance. The following model classes can be considered, with growing complexity: linear, semi-static, with load transfer, full suspension model, full 3D vehicle. According to Mr. Ruijs's proposal a full 3D model should be necessary.

Dr. Heess: as a vehicle manufacturer the majority of the needed information is available, but still sensitivity analysis will be necessary, to know, which parameters are really important, which can be neglected or set to a specific value.

Dr. Palkovics: The parameters of the model should be available either in explicit or in implicit form. The opportunity for black-box models should be created.

Dr. Straub: model validation should run only once. If the model is validated, the vehicle to be simulated should be chosen.

Dr. Palkovics, Dr. Heess: not all the test should be executed with all vehicles, only the relevant test(s) for the given vehicle type.

Technical issues about Mr. Ruijs' proposal:

Mr. Mayr-Fröhlich: the proposal should either include all of the influencing system (4-wheel drive, 6-wheel drive, etc) or none of them (even removing differential lock or height control specifications).

Dr. Palkovics: differential lock is a practical thing, should be left in the proposal, whilst a quick height control has influence on vehicle dynamics, so has to be modelled by the simulation.

Categories M, N, O deleted from the proposal, the affected categories should be listed in the scope.

Validation of the simulation: the proposed 5 and 10% values have been placed in square brackets. The vehicle and system manufacturers should send the corresponding values of their systems and if needed, the values will be modified.

Mr. Ross, about Annex 18: If one technical service performs the test with a simulation tool, it might be not accepted by another technical service because there is no written document about the procedure – for this a document has to be created.

Dr. Heess: the report of a technical service that is accepted by the EU should be accepted between different technical services, these reports should be used.

In addition to the revisions made during the meeting to document EVSC05-35, Mr. Jennison agreed to add a simulation tool approval report as an appendix.

Mr. Ross about ISO11992: only 2 from 10 proposals have been accepted by the ISO11992 working group. He will send the modifications to Dr. Palkovics who will contact the ISO11992 group with the proposal of the EVSC working group as soon as possible. The document should also contain the proposed additional information provided to the driver.

The text of the proposed amendments to the ECE Reg. 13 has been revised during the meeting and subsequent to the meeting, to bring the trailer section in line with the motor vehicle section and add in the revised EVSC05-35; the current version is EVSC04-01 Rev 5.

Conversation about EVSC: vehicles where EVSC is mandatory and where it is not. The group should propose a list of vehicles where EVSC should be mandatory.

The GRRF did not like the word “demonstration”; the members of the group should find another appropriate word instead of demonstration.

In order to understand their motivation Dr. Palkovics will have discussions with representatives of the Japanese, French and Russian organizations, and if needed, there will be another meeting in December 2005.

The chairman then closed the meeting thanking all participants for the contributions and their positive attitude.

Enclosed documents and presentations:

EVSC04-01 Rev 5
EVSC05-35 Rev 1
EVSC05-36 Participants

Peter Koleszar
Secretary EVSC ad hoc Meeting.