M M I N U T E S
5th GRB Informal Group ASEP Meeting
The Hague, 8th until 10th November 2006

0	**Attendance**	Action
	Commission EU; Germany; France; Spain; Italy; Japan; Netherlands; Sweden; USA, ETRTO; OICA; CLEPA, T&E	INFO

1	**Opening of the meeting**	Action
	Mr. Kortbeek (NL), **Chairman** of the GRB Informal Group, welcomed the group. He excused mr. Moore (ISO) and mr. Ainge (UK). They informed him that they were not able to come. He introduced especially some people who attend the meeting for the first time: mr. Irnig (German ministry of environment), mr. Showler from OICA, mrs. Renshaw from T&E and mr. Pardo from France. Tomorrow mr. Dörge from CLEPA will attend the meeting to give a presentation.	INFO

2	**Approval of the agenda**	Action
	The chairman puts forward some remarks for the agenda. After point 4 we will discuss the process of the meeting. Two extra items are put on the agenda: 1) the boundary conditions and 2) the number of measurements for a valid testing procedure. Point 7 "limit values" will be changed in "limit concepts". After point 9a we discuss 9b "limits". The proposed agenda (GRBIG-ASEP-05-001) was adopted with these minor modifications.	DECISION

3	**Housekeeping**	Action
	Only some practical items were discussed.	INFO
4	**Approval of Minutes of the 4th meeting**	Action
	The minutes (GRB-IG-ASEP-04-009) were adopted with a few mutations. Two comments were raised by Germany: page 1, point 5: "GRB agreed" not formally, but there were no rejections page 3, sentence "Germany argued that there is no need to test vehicles with much more tire noise than 50%" will be skipped Due to the actions: p. 2, mr. De Graaff sent the document p. 3, Germany, it will be in the presentation p. 3, mr. Steven: it will also be presented	DECISION

	p. 3, mr. De Graaff will present the results during this meeting p. 4, OICA has some information available p. 5, on top, OICA will present some data p. 6, CLEPA, result will be in the presentation tomorrow Chairman concluded that all the actions have been fulfilled.	

5	**Measurements: overview of results**	Action
	There were presentations by several persons. **1) Presentation of OICA by mr. Gerhard:** See document GRBIG-ASEP-05-003 Comments related to the content of the presentation: ETRTO: Generally, this method takes into consideration the Normalized Engine speed versus SPL in dB(A) but it is a "free" /"open" slope with no restrictions to the noise increase with the normalized engine speed. The tyre noise is included and the engine noise. It can detect a linear behaviour but gives no limitations to the sound increase vs. engine power increase. Can legislators accept this concept for all the vehicles as a general rule? Mr. Steven: three comments: 1) how do you deal with resonances? 2) same comment as ETRTO: no slope limitation, what are the limits? Should every thing that is allowed at the moment also be allowed for the new procedure? 3) only high engine speed is tested, we also have to test lower engine speed CLEPA: is the slope a good criterion to avoid something, because there is a big variety in slopes? Chairman: it is an issue for R51 body but also an issue for the ASEP procedure. Sweden: can you combine the method with EURO-VI? And is there still a need for ASEP with EURO-VI? or only for EURO-IV? Chairman: Can technology modify the slopes ? Mr. Steven: the method is performance based, so it's also good for EURO-VI, but it will be more complicated for the manufacturer. OICA: the total noise is a result of all sources, so it is different for different cars. Action for OICA: circulate the data table of figure page 4 **Presentation of mr. Volkenborn**	INFO ACTION

	Mr. Volkenborn presented a few examples that will not be circulated as a document for confidential reasons. • results of measurements of engine noise in an anechoic chamber • cars that are normally used in Europe • for the engine noise the slope vary from 0 to 25 dB(A)/1000 rpm The main message of his presentation was that there is no general answer for the slope because it depends on the vehicle. Action for OICA: present some information about the engine speed that is common in test circumstances of Annex 3 **Presentation of JASIC by mr. Shirahashi** See document GRBIG-ASEP-05-004 • in the examples the slope of six different vehicles is slightly higher then 5 dB(A)/1000 rpm • point of discussion: does the German/French proposal work for CVT? you cannot draw a line, but the green points are lower than the red ones; how many measurement points do you need? • question ETRTO: what if you change the number of runs from 8 to 4? Jasic: the time needed will become 1.3 instead of 1.7 • question Chairman: what is the problem with respect to the maximum speed? Answer: some test tracks are too small to safely drive that speed. For spatial reasons, they can not be build longer. • remark of CLEPA: we look at cars that already exists, we have to choose also cars that we don't accept; what kind of behaviour do we want to reject in the future? • Mr. Steven presented a slide with an "example for the necessity of ASEP", a motorcycle, with a flap gives a extra noise of 10 to 15 dB(A) • Question: is there a market for this kind of equipments (in future)? can we handle the problem with type approval? Reaction of Chairman: 1) if we allow it for new cars, then we have no possibility for aftermarket; 2) the terms of reference says we have to make a test. This item will be discussed in relation with the text for the main body. **Presentation of TÜV Nord by mr. Steven:** See document GRBIG-ASEP-05-005 Main conclusions of the presentation: • The Dutch proposal does not need propulsion noise calculations but it can be doubted that the difference in overall noise between different gears is constant and it is questionable why the difference should be limited to 0 for lower gears than gear "i", because it allows higher propulsion noise levels for those gears.	ACTION

- A method that is based on total noise versus engine speed cannot work properly because of the tyre/road noise influence.
- At this stage of the investigations/discussions it seems to be too early to come up with a well-founded proposal for GRB.
- We need an additional requirement for automatics, the engine speed is not enough for automatic gearboxes, otherwise you can have at very low speeds very high noise levels.

Remark of OICA: You miss the acceleration requirement, that's a discussion we had already in Annex 3. What is the problem for Annex 10? Do we have problems with automatic vehicles in relation to noise? You can get the same for manual transmissions.

Chairman: the example of mr. Steven shouldn't be legal in real situation. How can you deal with it? There are different options 1) it's cycle detection (we discuss it under agenda item 9) 2) we need a "not to exceed level" 3) the ASEP test method with a curve.

Which option prefer the member states?

- CLEPA: not an item for CLEPA, personal preference of mr. Steenackers is 3)
- Italy: also 3), a speed and acceleration based method
- NL: a system based on acceleration and speed, combined with a "not to exceed level"
- EU commission: engine speed is the relevant factor
- Sweden: no preference at the moment
- USA: do not limit technology, acceleration and speed are relevant, but mr. Feith cannot give a solution for this item
- Spain: no preference at the moment
- OICA: we need to focus on what is really relevant for Annex 10, some things are already tackled in de main body, there is more research needed
- Japan: engine speed is the relevant factor, more data is needed for a good description
- Germany: 2) "not to exceed level", but that's based on one example, further investigation is needed
- France: it's not possible to work with a "not to exceed level", it's also a problem of driving condition
- ETRTO: we will not manage to find one solution for the different problems (heavy powered vehicles, gearbox types, …), we must take solutions for each problem separately, perhaps by introducing several vehicle classes with separate demands.
- T&E: is not a specialist on these specific issues, but can join to the meaning of ETRTO

Suggestion of Sweden: a not to exceed level (the limit of Annex 3) for the speed range up to 50 km/h

Reaction of USA: that's more or less similar to the USA, there is a requirement for trucks: up to 45 miles a a limit may not be exceeded and another limit for higher speeds, for all driving behaviour

Presentation of CLEPA (by mr. Dörge)

See document GRBIG-ASEP-05-007

The topic of the presentation is "valve-like-things" in exhaust systems. The technology gives many opportunities, acceptable or not. It is possible to improve the exhaust system due to noise with a valve. The suggestion of CLEPA is that we have to be careful with sentences in the main body like "valves are not allowed". Performance criteria are required, not design criteria.

USA: can de performances easily be altered after the installation? CLEPA: that depends, sometimes the valves are internal, others are external.

Spain: What in case of "valve failures"? CLEPA: for a specific customer, it was specifically checked that in case of failure, it still fulfils the requirements.

6	**Data processing**	Action

a. clarification of the several options (by Mr. de Graaff)

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See document GRBIG-ASEP-05-009

Mr. de Graaff gave a summary of the most important differences between the methods, related to the collection of the data and the data processing. He emphasised that only the German / French method is a more detailed specified method, the others are concepts. For the examples in his presentation he did some assumptions due to topics (limits etc.) that have to be discussed later on in the meeting.

The overall results for the uncertainty of the different proposals:

proposal	uncertainty (dB(A))			
	measurements	calculation reference value	limit curve	total
D/F	1,5	2,5	0,0	2,9
Japan	1,5	1,0	2,0	2,7
Graaff	1,5	1,0	0,0	1,8
Gerhard	1,5	1,0	2,0	2,7

b. criteria

Next criteria can be of importance for choosing a method.

1. costs
    a. workload/time
    b. equipment (preference is: not more than annex 3)

2. fitness for purpose
    a. how to distinguish good from bad vehicles?
3. globally applicable
    a. applicable to all kinds of technology
    b. technology neutral
4. precision / accuracy

It was discussed if it is possible already to score the methods and to make a choice for a method. There is a lot of indistinctness about the specific vehicles of concern.

c. scoring the candidates

Rather than scoring, a compilation was made of the pro's and contra's of each approach. The discussion of the methods (round the table) resulted in the next scheme.

Criteria for data collection and discussion about the methods (+, 0 or -)

	G / F	Japan	DeGraaff	Gerhard
1 fittness for purpose (distinguish bad and good verhicles)	OK, but …	OK, to check for man.tr.	OK, check the slopes	OK, to be checked
2 applicable for all kind of technologies (manual, automatic / CVT / …)	OK		dep. on gear selection	
manual transmission		to discuss	to be checked	check range
automatic transmission / CVT		OK	to be checked	to be checked
3 accuracy (repeatabillity, …)	same order (can be improved)	same order (can be improved)	same order (can be improved)	doubtable
4 costs				
workload/time	131%	100%	131%	<100%
equipement	continuous meas.	no extra	no extra	no extra

d. result: strong and weak points of each option

After discussion of the strong and weak points of the different methods the next list of open points was formulated.

G / F	Japan	DeGraaff	Gerhard
veh. with high tyre noise contribution			
relation with limit for CVT			
improvement of uncertainty	improvement of uncertainty	improvement of uncertainty	improvement of uncertainty
	improve for manual transm.		
		high power-torque/mass veh.	
			sensitivity for execution of the test

For a better understanding of the strong and weak points and for the possible

	improvements of the methods, more measurement data is needed. It will be helpful to measure not only "normal vehicles" but also the vehicle in the boundary of the "technology range". E.g. 8 litre engine, diesel, turbo, … Action: everybody tries to do some measurements in the period before the next meeting. Action: Mr. Bietenbeck will do the coordination of the measurements, to inform everybody about things that are going on and to prevent that people measure more or less the same vehicles. You can also ask him information (car code) about cars, he will contact you to the manufacturer. It's advised to use the standard datasheet of OICA. **Number of measurements**: the proposal is to do make 7 - 10 measurements of each vehicle in each gear, for two gears 2 and 3rd. **Boundary conditions:** a problem can be the test temperature of the air and the surface. On the other hand, we do comparison measurements, so the temperature should not be a problem, even if it is below 5 degrees. Action mr. Steven: also analysis of existing data will be done. OICA will provide the ASEP-members with the data entry sheet. Everybody can (based on this data sheet) try out the four methods for the data processing. Chairman puts forward that it would be useful to have a practical demonstration of the vehicles that will be evaluated. OICA responded that they will take it back and that the organisation of such an event should not only be done by industry. Germany and the Netherlands suggested that they will contribute in the organisation. **f. what is your choice** It wasn't possible to discuss this item at the moment. **g. choice of the group** It wasn't possible to discuss this item at the moment.	ACTION ACTION ACTION ACTION

7	**Limit concepts**	Action
	This item was already discussed during the different presentations. It's clear that more data is required for a detailed discussion of the limitation concepts.	INFO

8	**Application of the ASEP requirements**	Action
	What are the possibilities for certification and type approval? Is a system of type approval against the intentions of 6.2.3.1. of the main body? What are the options? 0) Self-certification, you don't need a Type Approval Authority. This is not applicable in Europe, you always need an approval. Therefore, not really an option. 1) Self testing and declaration by the manufacturer and possibility of test	INFO

	house to do the checking tests. The Type Approval Authority can test again. 2) Full testing by the test house and certification by the Type Approval Authority. Only the options 1) and 2) are real possibilities. Chairman asked the member states for there preferences. • Germany: 1), ASEP should also be part of COP • Japan: no preference at the moment, they first will discuss it internal • France: no preference at the moment, they will explain there preference in GRB • USA: no preference, option 1) is most comparable with the system in the USA • OICA: option 1) • CLEPA: no opinion in relation with this item, but they will stress the importance of COP • NL: option 1) with COP • EU: option 1) with COP, would prefer that the datasheet will given with the declaration • Italy: option 1) Conclusion: at least in Europe there is a preference for option 1) in combination with the COP. **Datasheet** EU puts forward that datasheets are needed as a product of the testing. The datasheets can be used in cases of doubts to verify if there is a problem. The Type Approval Authority needs some information. If there are doubts, the first thing of the test house is to examine the measurement results of the manufacturer. OICA: it seems not very efficient to force the manufacturer to measure all types, only for the datasheet. Germany supports the meaning of OICA that there is no benefit to force the manufacturers to produce datasheets. Chairman asks the industry to make a proposal for the case that datasheet is only provided for vehicles of concern. Action: OICA accepted. **COP** The feeling about COP is strong enough to advise GRB to make Annex 10 subject of COP. Action: Chairman will advise GRB to do so.	ACTION ACTION

9	**Text main body**	Action
	There was a proposal from the Netherlands to amend text in the main body on	INFO

	ASEP. See document GRBIG-ASEP-05-011?? The proposal was clarified by mr. Stoffels. The bold text is new, the plain text is old and some text is skipped. The discussion focussed on the paragraph: *6.2.3.3. The vehicle manufacturer shall not install any control device, function, system or measure that could affect the noise reducing capabilities of the exhaust silencing system, the intake silencing system and the engine enclosure. This behaviour is commonly referred to as "non-linear noise control strategy". Such device, function, system or measure can only be allowed, provided that it changes the noise emission of the vehicle to a level which is proven to be lower or equal compared to the situation as tested in Annex 3**.* CLEPA asked not to prohibit technology, and to avoid requirements on technologies. The advise of CLEPA is to skip the whole issue of the proposal. Germany supported the idea for using performance criteria and not design criteria. EU didn't have problems with the formulation: the wording is about behaviour, not design criteria. Action: OICA will make a text proposal for the point of "modification of the systems" after the type approval. Another issue is the question if the whole vehicle operation map is part of the regulation, or only some restricted areas. EU: the whole vehicle operation map is part of the regulation, but from practical reason we check it in some spots. Chairman did a short survey. Do we want to regulate the whole area that is not regulated with the current regulation? yes or no? Yes: EU, NL No: Germany, OICA, CLEPA No opinion: Japan, France, Italy Some contracting parties asked time for internal discussion about this item. Chairman concluded that there are contradictory opinions about this item, he will bring in this subject in GRB. Action: NL will rewrite the text to performance and vehicle behavior (skip "shall not install") and also the examples will be skipped. Action: Chairman will bring in the result in GRB next year.	ACTION ACTION ACTION

10	**Any other business**	Action
	There was no other business.	INFO

11	**Review decisions**	Action
	1) provide more data / information about the examples of the presentations • mr. Gerard: will circulate the data table of figure on page 4 (on request of mr. Steven) • mr. Gerhard will present some information about the engine speed that is common in test circumstances of Annex 3 • mr. Steven will analyse existing data (open points "to be checked") • mr. Gerhard will provide data entry sheet **2) many participants will do analysis and measurements to get more information and to answer the open issues of the data processing methods** • we use the datasheet of mr. Gerhard • mr. Bietenbeck will coordinate (inform him about measurement plans in advance) **3) organisation of demonstration of "vehicles of concern"** • mr. Gerhard will try to organise it with help of Netherlands and Germany **4) other actions related to the data processing methods** • all participants will check the uncertainty of the methods due to single limit proposal • mr. Gerhard will improve the data and analysis entry sheet **5) application of ASEP requirements** • preference for option 1 (self testing / declaration of the manufacturer / TAA can test again in case of doubts) • mr. Stoffels check if Annex 10 is subject of COP • OICA will propose a text for dealing with a modification after type approval • OICA will propose a text for dealing with vehicles of concern • chairman will propose it to GRB **6) text main body related to area outside annex 3 and 10** • action chairman: due to strong contradictory opinions, issue will be discussed in GRB • NL will rewrite the proposal to vehicle performance behaviour **7) relation of ASEP with R 59** • CLEPA will make a proposal	**ACTIONS**

12	**Coming process**	Action
	The coming process will be the preparation of a document for GRB, February next year.	INFO

13	**Next meeting**	Action
	The next meeting will be organised after the GRB meeting in Geneva: 22nd February 2007.	INFO

14	**Closure of the meeting**	Action
	Mr. Kortbeek thanked all participants for there presence and contributions at the 5th meeting of the ASEP-group in the Netherlands.	INFO