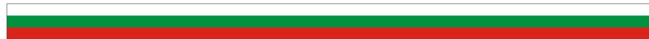


**TAAM** 2-5 June 2010  
Sofia, Bulgaria  
TYPE APPROVAL AUTHORITIES MEETING



**TYPE APPROVAL AUTHORITIES MEETING**

**3 & 4 JUNE 2010 – SOFIA, BULGARIA**

**TAAM MINUTES**

**Issue Date: 9 July 2010**

# **TYPE APPROVAL AUTHORITIES MEETING**

**3 & 4 JUNE 2010 – SOFIA, BULGARIA**

**HELD IN THE HILTON HOTEL, MOUSALLA HALL**

## **ATTENDEES**

Austria

Belgium

Bulgaria

Cyprus

Not represented

Czech Republic

Denmark

Not represented

Estonia

European commission

Finland

France

Germany

Greece

Not represented

Hungary

Iceland

Ireland

Italy

Latvia

Lithuania

Luxembourg

Malta

Netherlands

Norway

Poland

Portugal

Romania

Slovakia

Slovenia

Spain

Sweden

Switzerland

United Kingdom

**Observers:**

Croatia

Turkey

## AGENDA

### **1. Opening of the meeting**

### **2. Adoption of the Agenda**

### **3. Adoption of the minutes from BRDO, Slovenia (8 & 9 October 2009)**

### **4. Follow up on actions from the BRDO meeting**

#### 4.1. Brdo Agenda Item 4.2.

- *Bern Agenda Item 4.3: 2007/46/EC Annex XVII: Multi-stage EC Type Approval - Information (if appropriate to report at this stage)*

#### 4.2. Brdo Agenda Item 4.7.

- *Bern Agenda Item 5.12: 2007/46/EC: Legal framework for the placing on the market of electric vehicles - Information from GRSP about the recent development in this field*

#### 4.3. Brdo Agenda Item 5.2.

- *715/2007/EC: Emission of gaseous and particulate pollutants - hybrid vehicles with pure mechanical propulsion by an electric engine - Report on progress made on this issue (if appropriate)*

#### 4.4. Brdo Agenda Item 5.4.

- *2002/78/EC: Secondary coupling providing some residual steering action on trailer - Information on GRRF debates (if appropriate)*

4.5. Brdo Agenda Item 5.8. - *2007/46/EC: EC-type-approval certificate - Information about possibilities to cover the issue*

#### 4.6. Brdo Agenda Item 5.13. - *Short report of Replacement catalysts meeting*

4.7. Brdo Agenda Item 5.22. - *631/2009/EC: Pedestrian Protection – Information on legal service opinion (if available)*

#### 4.8. Brdo Agenda Item 8.9 - *Information on the outcome of responses received*

### **5. Items relating to Framework Directive 2007/46/EC (Motor Vehicles)**

#### 5.1. 2007/46/EC, Article 23: National type-approval of small series

#### 5.2. 2007/46/EC: Approval of vehicles converted from M<sub>1</sub> to N<sub>1</sub>

#### 5.3. 2007/46/EC, Annex II, subparagraph 4.3: Symbol G

#### 5.4. 2007/46/EC, Annex II, subparagraph 4.3: Classification as an off-road vehicle (symbol

G)

#### 5.5. 2007/46/EC: TVV definition regarding bodywork type

#### 5.6. 2007/46/EC, 2003/37/EC, 2002/24/EC: CoC

#### 5.7. 2007/46/EC: CoC – Type of bodywork and wheelbase for single-axle trailers

5.8. 2007/46/EC, Annex IX, Regulation (EC) No 385/2009, Annex IX of Directive 2007/46/EC: Tyres, Load Capacity and speed symbol, wheel dimension

5.9. 2007/46/EC, Annex II and XI: An ambulance constructed as a bus or a bus with places for sick or injured people

#### 5.10. 70/221/EEC: Trailers O<sub>1</sub>, O<sub>2</sub> and rear underrun protection

#### 5.11. 74/60/EC as amended by 2000/4/EC: Interior fittings

#### 5.12. 2007/46/EC and 74/483/EEC: Exterior projections for motor-caravans

#### 5.13. 76/756/EEC as amended by 2008/89/EC: Vehicle lighting

#### 5.14. 94/20/EC and UN/ECE Regulation No 55

#### 5.15. 2007/46/EC and 97/27/EEC: Registration masses

#### 5.16. 2007/46/EC and 97/27/EC: Definition of length of the loading area

#### 5.17. 97/27/EC: Masses and dimensions

#### 5.18. 2005/55/EC: WVTA containing Euro IV engines

5.19. 715/2007/EC: Information about repair and maintenance and fuel consumption especially for Electric and H<sub>2</sub> vehicles

5.20. 715/2007/EC: Letter F and California Code

5.21. 2007/46/EC: Emissions for motor caravans

5.22. 2007/46/EC, Annex IX: CoC - Coupling device

#### **6. Items relating to Framework Directive 2002/24/EC (Motor Cycles)**

6.1. 2002/24/EC, Annex II (Information Document), line 5.2., rims

6.2. 2002/24/EC, Annex II and X: Coupling devices for motorcycles

6.3. Reference to certain directives applying to 2/3 wheelers

6.4. 97/24/EC as amended by 2006/120/EC: Exhaust system with flaps

#### **7. Items relating to Framework Directive 2003/37/EC (Agricultural and Forestry Tractors)**

7.1. 2000/25/EC as amended by 2005/13/EC: Emissions for tractors

7.2. 2008/2/EC: Field of vision for agricultural tractors

#### **8. Miscellaneous**

8.1. Short report of the ETAES Meeting

8.2. Short report of the Multi – Stage Subgroup

8.3. 2009/40/EC: OBD-equipped engines

8.4. Adoption of vehicles to use for disabled persons

8.5. ECE Regulation 43: The requirements for abrasion wheels

8.6. ECE-R67.01 LPG Equipment (*continuation of Brdo question 8.6*)

8.7. UNECE-Regulation 79 - Steering equipment – steer by wire – joystick – (*continuation of Brdo question 8.8*)

8.8. Camera-Monitor-Systems (CMS) (R46)

8.9. Relationship between vehicle type definitions for EC Small Series and EC Whole Vehicle approval

#### **9. Future Meetings**

9.1. 2010 Q3/Q4: Romania

9.2. 2011 Q1/Q2: to be discussed

## **MEETING QUESTIONS AND NOTES**

### **1. OPENING OF THE MEETING**

#### **TAAM Minutes:**

The delegates were welcomed to Sofia by Mr Simeon Arnaudov (Executive Director of Road Transport Administration) and the meeting was chaired by Mrs Iliyana Atanasova.

### **2. ADOPTION OF THE AGENDA**

#### **TAAM Minutes:**

The proposed meeting Agenda was accepted. The meeting Chair agreed to add, under Miscellaneous item 8.9, a verbal question concerning the relationship between vehicle type definitions for EC Small Series and EC Whole Vehicle approval.

### **3. ADOPTION OF THE MINUTES FROM BRDO, SLOVENIA (8 & 9 OCTOBER 2009)**

#### **TAAM Minutes:**

The minutes from the previous TAAM meeting held in Brdo, Slovenia on 8-9 October 2009 were adopted without amendment. A Member State delegate noted that a second debate on Brdo item 8.6 ECE-R67.01 LPG Equipment (Sofia item 8.6) is needed.

#### **4. ITEMS CARRIED OVER FROM THE BRDO MEETING**

##### **4.1 Brdo Agenda Item 4.2.**

**- Bern Agenda Item 4.3: 2007/46/EC Annex XVII: Multi-stage EC type approval, Information (if appropriate to report at this stage)**

##### **TAAM Minutes:**

**This issue is still due to be addressed by GRSG. It was proposed that this item could perhaps alternatively be raised in an appropriate EC working group in Brussels, if more appropriate. The development on this issue to be reported at the next TAAM.**

##### **4.2 Brdo Agenda Item 4.7.**

**- Bern Agenda Item 5.12: 2007/46/EC: Legal framework for the placing on the market of electric vehicles - Information from GRSP about the recent development in this field**

##### **TAAM Minutes:**

**The European Commission informed about the recent development on this issue and reported that there is a plan to introduce amendments to the corresponding regulations and standards in the field of Motor Vehicles in order to make specific provisions for electric vehicles, as follows:**

**1. Introduce electric safety requirements to EC vehicle type-approval legislation by mandating the application of UNECE Regulation 100 – Council Decision to be adopted in 2010;**

**2. Amend Directive 2007/46/EC by a Commission Regulation to specify the applicable requirements for electric vehicles regarding other technical requirements – to be adopted in 2010;**

**3. Launch a study to identify missing provisions to complete EC type-approval legislative framework – conclusions of study to be available in 2010, consider appropriate actions on the basis of conclusions;**

**4. Mandate the European standardisation bodies to adopt a European harmonised approach for charging system – mandate to be issued in 2010.**

**In addition to mandating R100, it is intended that, for EC Whole Vehicle approval, electric vehicles will also need to comply with specific electric vehicle provisions to be included in ECE Regulations 12, 13, 51, 83 and 85.**

**Reference was made to the work ongoing by the Informal GRPS Working Group on Electrical Safety (ELSA).**

**It was noted that the Commission intends that motor vehicles should now be excluded from the Low Voltage Directive and it was reported that work is ongoing to include the appropriate provisions within the relevant EC vehicle Type Approval legislation.**

**4.3 Brdo Agenda Item 5.2.**

**- 715/2007/EC: Emission of gaseous and particulate pollutants - hybrid vehicles with pure mechanical propulsion by an electric engine - Report on progress made on this issue (if appropriate)**

**TAAM Minutes:**

**It was reported that a Member State is preparing proposals for additional categories of engines to take account of new technologies. The Commission has been requested to consider a future approach to covering different types of electric and hybrid vehicles in vehicle emissions legislation.**

**4.4 Brdo Agenda Item 5.4.**

**– 2002/78/EC: Secondary coupling providing some residual steering action on trailer - information on GRRF debates (if appropriate)**

**TAAM Minutes:**

**A Member State delegate reported that this had now been discussed by GRRF and it will be subject to discussions at the next WP29 meeting (22 June 2010).**

**4.5 Brdo Agenda Item 5.8. - 2007/46/EC: EC-type-approval certificate - Information about possibilities to cover the issue**

**TAAM Minutes:**

**Nothing to report at this stage – item carried over to the next TAAM.**



#### **4.6 Brdo Agenda Item 5.13. - Short report of Replacement catalysts meeting**

##### **TAAM Minutes:**

**A Member State delegate reported that the replacement catalyst subgroup meeting had been a very worthwhile discussion which was conducted in a spirit of co-operation and which had comprehensively covered the issues involved.**

**In particular, the delegates of one of the Member States were thanked for their open and honest contribution.**

**The subgroup recognised the difficulty in achieving a common approach to the amount of testing required for R103 approvals and concluded that the current wording of the legislation does not provide sufficient scope for a reduction in the amount of testing (using a clear worst case approach that could be adopted as a common procedure by all authorities) within the scope of a TAAM agreement.**

**It was therefore agreed that it would be necessary to amend the wording of ECE R103 (and thereby also Commission Regulation (EC) 692/2008 Annex XIII).**

**It was recognised that a Member State delegates had presented some detailed proposals for a procedure that could provide the basis for suitable amendments to the legislation and this Member State agreed to submit a proposal to GRPE for amendments to R103 accordingly. It was suggested that the proposed R103 amendments should also include provisions for durability objectives.**

**The subgroup noted that this could be timed to be incorporated with other changes currently being implemented in R103 regarding replacement Diesel Particulate Filters.**

**Subsequent to the subgroup meeting, the Spanish delegates prepared a draft proposal for amendments to R103 and this will be presented to the GRPE.**

**Further development of this particular item is therefore no longer considered to be within the scope of the TAAM.**

**4.7 Brdo Agenda Item 5.22. - 631/2009/EC: Pedestrian Protection – Information on legal service opinion (if available)**

**TAAM Minutes:**

It was reported that the opinion of EC Legal Services is still not available, but it was noted that whilst an existing Directive 2003/102/EC approval would remain valid it would not be possible to extend that approval.

Noting the differences in the technical requirements for Pedestrian Protection between Directive 2003/102/EC and Regulation (EC) 78/2009, it was confirmed that it was possible to obtain a new 78/2009 approval to cover Brake Assist and yet still retain the existing 2003/102 approval for the Pedestrian Protection provisions.

**4.8 Brdo Agenda Item 8.9 - Information on the outcome of responses received**

**TAAM Minutes:**

The TAAM delegates were reminded of a previous request for providing information regarding the point of contact in each country for the exchange of vehicle recall information (a few replied received).

Some delegates stated that 2 bodies are involved in the recall procedure – Type-Approval Authority and the respective Recall Agency.

In connection with this, the meeting agreed that, according to Directive 2007/46/EC, the official point of contact should be the Approval Authority. It would then be up to the Approval Authorities to forward the information to their respective designated bodies as appropriate.

## 5. ITEMS RELATING TO FRAMEWORK DIRECTIVE 2007/46/EO (MOTOR VEHICLES)

### 5.1 2007/46/EC, Article 23: National type-approval of small series

**NKS : PERIOD PRESCRIBED FOR REPLY**

- **Regulation number :**

Directive 2007/46/EC amended EC/661/2009 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles.

- **Text of Directive 2007/46/EC**

*Article 23 : National type-approval of small series*

[...]

*6. The validity of the type-approval shall be restricted to the territory of the Member State that granted the approval. However, if the manufacturer so requests, the approval authority shall send by registered mail or by electronic mail a copy of the type-approval certificate and its attachments to the approval authorities of the Member States designated by the manufacturer.*

*Within 60 days of receipt, such a Member State shall decide whether or not it accepts the type-approval. It shall formally communicate that decision to the approval authority referred to in the first subparagraph.*

- **Issue**

1. Since the Member States have 60 days to decide whether or not they accept the national type-approval, shall we apply the principle of consent by silence? (i.e. a Member State which does not sent its decision, implicitly accept the national type-approval)

2. Shall the national type-approval files be sent using ETAES?

**Possibilities of solution**

**Comments**

1	A	Yes, the principle of consent by silence shall apply	
	B	No, without explicit decision, the national type-approval is implicitly refused	
2	C	Yes	The date of the deposit of the file corresponds to the first day of the 60 analysis days
	D	No	People who get the files from ETAES are not those who will study the national type-approval they only care about registration.

**Type approving authority**

« e »

Selection of solutions		Accepted	Refused
	A	X	
	B		X
	C	X	
	D		X

**TAAM Minutes:**

**Question 1**

The majority of delegates support the solution that formal communication (explicit decision) is needed (principle of consent by silence is not applicable for this topic).

**Question 2**

It was confirmed that ETAES could be used as a means of circulating National Small Series approvals but this should then be followed up with a written letter/email to all Member States. It would then be necessary for each Member State to provide a written response within the prescribed time period.

## 5.2 2007/46/EC: Approval of vehicles converted from M<sub>1</sub> to N<sub>1</sub>

### Art. 23: National type-approval of small series Annex XVII: Multi stage EC type-approval

It is common in one of the Member States to convert M1 vehicles to N1 on a national basis before registration first time. This for taxation reasons. In addition to the N1 classification/requirements, some special national requirements are to be fulfilled (only one seat-row, separation wall, specified min. volume of cargo-room). Such conversions from M1 to N1 are probably common also in other markets, and should be of general interesting.

In such cases we normally grant national type-approval (NTA) for the converted vehicle. NTA however, will be phased out in the near future.

Options in future for approval of such vehicles might be the following:

- Individual approval
- Whole vehicle type-approval (WVTA)
- **National small series type-approval (NKS)**
- **Multi-stage type-approval (new stage)**

#### Question I:

- **NKS:**

Is a whole vehicle type-approved M1 vehicle type, converted to N1 by a new manufacturer (for instance the national importer) with only small modifications, possible to handle as a new type, and may the authority grant NKS type-approval for this vehicle type?

- **Multi-stage t-a:**

Is a whole vehicle type-approved M1 vehicle, converted to N1 by a new manufacturer (for instance the national importer) with only small modifications, possible to handle as a new stage and grant t-a for the new stage/vehicle type?

- **Other comments upon this kind of conversion?**

#### Question II:

If a vehicle type is converted to N1, it has to fulfil all the requirements for the new class. If the base vehicle is an EC type-approved M1, it fulfils all the requirements for M1. Most of the requirements for N1 are identical or less strict than for M1.

In such cases, shall the fulfilling of all the N1 requirements be verified from a technical service, or might the authority base the t-a on fulfilling of M1 requirements for the EC type-approved base vehicle (only those requirements being identical or less strict for N1 versus M1).

Type approval authority e



**TAAM Minutes:**

**The meeting agreed as follows:**

**Question 1**

- The multi-stage approach would be the most appropriate for European approval (Full or Small Series).
- For National Small Series the exact requirements would depend on the national legislation but a multi-stage approach would still seem to be the most appropriate.

**Question 2**

- The completed vehicle must meet all the relevant requirements for N1 vehicles for each system approval and must be approved accordingly.
- The N1 specification approvals could be achieved by either:
  - 1) The Annex I test report only route
  - 2) The Annex III approach with approval certificates for each system
  - 3) The mixed approach.
- For National Small Series the exact requirements would depend on the national legislation.

### 5.3 2007/46/EC, Annex II, subparagraph 4.3: Symbol G

#### BACKGROUND

One of the conditions mentioned in directive 2007/46/EC (annex II, subparagraph 4.3) for classification of a lorry (category N<sub>3</sub>) as an off-road vehicle is that all wheels can be driven simultaneously. Recently more and more vehicles with auxiliary drive (for instance hydrostatical front wheel drive) have been put on the market. Some manufacturers count these vehicles as all-wheel drive vehicles, though the auxiliary drives are often limited in speed and torque.

<i>Wording of directive 2007/46/EC, annex II, subparagraph 4.3:</i>
4.3. Vehicles in category M3 with a maximum mass exceeding 12 tonnes or in category N3 are to be considered to be off-road vehicles <b>either if the wheels are designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged, or if the following requirements are satisfied:</b> .....

#### Major Concern

Considering that directive 2007/46/EC, annex II, subparagraph 4.3 doesn't say anything about neither a minimum torque nor a minimum speed of a drive wheel, we fear that manufacturers of vehicles with very weak or very slow auxiliary drives (or even token auxiliary drives) could demand to classify their vehicles as off-road vehicles in the sense of the directive in order to obtain the associated facilitations and advantages.

#### Questions:

1.) Do you always consider a wheel that is propelled by an auxiliary drive as a drive wheel or do you support a limitation for slow or weak auxiliary drives?

**Answer:**

- A) We think that wheels propelled by an auxiliary drive should always be considered to be drive wheels.
- B) We support the idea that weak and slow auxiliary drive wheels can only be counted as drive wheels when certain minimal requirements are met.

2.) In case you have chosen answer B, do you support adding a corresponding detailed definition in directive 2007/46/EC?

**Answer:**

- A) yes
- B) no

#### Comments:

#### Authority:

TAA code: „e”   
                  „E”

#### TAAM Minutes:

**The meeting recognised that the legislation is not completely clear in respect of auxiliary drives. It was explained that this question represented a hypothetical case and, whilst there was general support in principle for solutions 1B and 2A, the meeting agreed that it should wait for a real example before reaching a formal conclusion.**

## 5.4 2007/46/EC, Annex II, subparagraph 4.3: Classification as an off-road vehicle (symbol G)

**SUBJECT:** Classification as an off-road vehicle (symbol G)

**DIRECTIVE:** 2007/46/EC, annex II, subparagraph 4.3

### Background

According to the wording of directive 70/156/EEC, we assumed that in category N<sub>3</sub> there are two sorts of off-road vehicles:

- vehicles of which the wheels are designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged
- or
- vehicles of which at least half the wheels are driven and which have at least one differential locking mechanism or at least one mechanism having a similar effect and which can climb a 25 % gradient calculated for a solo vehicle,

whereas for both sorts of off-road vehicles the requirements concerning approach angle, departure angle, ramp angle and ground clearance had to be satisfied.

With the redraft of subparagraph 4.3 in directive 2007/46/CE a little change in the depiction of the text on the definition of an off-road vehicle has occurred (indent and dash for one line, see table stated below). Some manufacturers interpret those formal changes in the way that vehicles in category N<sub>3</sub>, of which all wheels can be driven simultaneously, can be considered to be off-road vehicles without satisfying for the requirements about the approach angle, departure angle, ramp angle and ground clearance. However, according to further information of a representative of the European Commission there has never been any intention to factually modify the definition of off-road vehicles since its introduction in directive 87/403/CEE.

Wording of directive 70/156/CEE, annex II, subparagraph 4.3:	Wording of directive 2007/46/EC, annex II, subparagraph 4.3:
<p>4.3. Vehicles in category M3 with a maximum mass exceeding 12 tonnes or in category N3 are to be considered to be off-road vehicles either if the wheels are designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged, or if the following requirements are satisfied:</p> <ul style="list-style-type: none"> <li>- at least half the wheels are driven,</li> <li>- here is at least one differential locking mechanism or at least one mechanism having a similar effect,</li> <li>- they can climb a 25 % gradient calculated for a solo vehicle,</li> </ul> <p>at least four of the following six requirements are satisfied:</p> <ul style="list-style-type: none"> <li>- the approach angle must be at least 25o,</li> <li>- the departure angle must be at least 25o,</li> <li>- the ramp angle must be at least 25o,</li> <li>- the ground clearance under the front axle must be at least 250 mm,</li> <li>- the ground clearance between the axles must be at least 300 mm,</li> <li>- the ground clearance under the rear axle must be at least 250 mm.</li> </ul>	<p>4.3. Vehicles in category M<sub>3</sub> with a maximum mass exceeding 12 tonnes or in category N<sub>3</sub> are to be considered to be off-road vehicles either if the wheels are designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged, or if the following requirements are satisfied:</p> <ul style="list-style-type: none"> <li>- at least half the wheels are driven,</li> <li>- there is at least one differential locking mechanism or at least one mechanism having a similar effect,</li> <li>- they can climb a 25 % gradient calculated for a solo vehicle,</li> </ul> <p>at least four of the following six requirements are satisfied:</p> <ul style="list-style-type: none"> <li>- the approach angle must be at least 25 degrees,</li> <li>- the departure angle must be at least 25 degrees,</li> <li>- the ramp angle must be at least 25 degrees,</li> <li>- the ground clearance under the front axle must be at least 250 mm,</li> <li>- the ground clearance between the axles must be at least 300 mm,</li> <li>- the ground clearance under the rear axle must be at least 250 mm.</li> </ul>



## Major Concern

Some manufacturers interpret the formal changes of the redraft of annex II, subparagraph 4.3 in directive 2007/46/EC in the way that vehicles in category N<sub>3</sub>, of which all wheels can be driven simultaneously, can be considered to be off-road vehicles without satisfying for the requirements about the approach angle, departure angle, ramp angle and ground clearance.

### Questions:

- 1.) Are you of the opinion that all-wheel drive vehicles in category N<sub>3</sub> can be considered to be off-road vehicles without satisfying for the requirements about the approach angle, departure angle, ramp angle and ground clearance? **Answer:**

A) yes

B) no

- 2.) Should subparagraph 4.3 of annex II of directive 2007/46/EC be adjusted so that it is clear that the text concerning approach angle, departure angle, ramp angle and ground clearance has to be applied to all off-road vehicles in category N<sub>3</sub>, regardless of whether they have all-wheel drive or not? **Answer:**

A) yes

B) no

### Comments

### Authority

TAA code: „e”   
„E”

### TAAM Minutes:

The Commission explained that, in 2007/46/EC, the indent preceding the text in the ‘*at least four of the following six requirements are satisfied*’ is incorrect and it should have retained the format previously used for 70/156/EEC.

It was confirmed that the 2007/46/EC text will be amended accordingly.

## 5.5 TVV definition regarding bodywork type

### TVV DEFINITION REGARDING BODYWORK TYPE IN 2007/46/EC

- **Regulation number :**

Directive 2007/46/EC amended EC/661/2009 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles.

- **Text of Directive 2007/46/EC**

<p><b>ANNEX II</b> [...]</p> <p><b>B. DEFINITION OF VEHICLE TYPE</b> [...]</p> <p>5. For all categories: Full identification of the vehicle just from the designations of type, variant and version must be consistent with a single accurate definition of all the technical characteristics required for the vehicle to be put into service.</p> <p><b>C. DEFINITION OF TYPE OF BODYWORK (only for complete/ completed vehicles)</b> [...]</p>
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- **Issue**

Considering the requirements in annex II part B point 5, can a type-variant-version combination (TVV) have more one bodywork type, as define in annex II part C?

#### Possibilities of solution

#### Comments

	A	Yes, a TVV can have more than one EC bodywork type (for example CI+CQ)	
	B	No, a TVV must have only one bodywork type	TCMV subgroup for annex II has in mind to delete above mentioned point 5. However there will be a criteria in variant to identify the bodywork type.

<b>1.1. Type approving authority « e »</b>	
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Selection of solutions		Accepted	Refused
	A		X
	B	X	

#### **TAAM Minutes:**

**The meeting agreed to left this issue open in order to consider the outcome of Annex II discussions.**

## 5.6 2007/46/EC, 2003/37/EC, 2002/24/EC: CoC

### Subject: safe certificate of conformity

Legislation (directive / regulation / etc): [2007/46/CE](#) ; [2003/37/CE](#) ; [2002/24/CE](#)

#### Text:

- **2007/46/CE** chapter VII, article 18 certificate of conformity, point 3: the certificate of conformity shall be designed to prevent forgery. To that end, the paper used shall be protected either by coloured graphics or by a watermark in the form of the manufacturer's identification mark.
- **2003/37/CE** annex III part I: the certificate must be drawn up using the manufacturer's letterhead and in such a way as to exclude any possibility of falsification. To that end it shall be printed on paper protected either by means of colour graphics or by means of a watermark corresponding to the manufacturer's identification mark.
- **2002/24/CE** chapter II article 7: the certificate of conformity shall be made in such a way as to prevent any forgery. For this purpose, the printing shall be made on paper protected either by coloured graphics or watermarked with the vehicle manufacturer's identification mark.

**Fact:** we found out that a lot of certificates of conformity for various category of vehicles which are extremely easy to forge.

The wording "colour graphics" is very lax / vague and is opened for a large range of interpretation and, from our experience, is used in the most simple way by the majority of manufacturers.

#### Question:

1. do you consider the necessity of modification of the above mentioned texts to impose better procedures for printing the certificates of conformity ?

Solution	accepted	refused
Yes		
No		

2. If yes, do you agree to send to the Commission the request to contact some experts in the domain of printing to find the best solutions?

Solution	accepted	refused
Yes		
No		

#### **TAAM Minutes:**

**There was general agreement that the current Certificate of Conformity requirements did not provide particularly robust security.**

**It was suggested that future development of the Framework Legislation could consider an electronic solution. It was further suggested that electronic Certificates of Conformity could then verified against electronic check-files that could be held in the European Type Approval Exchange System (ETAES).**

## 5.7 2007/46/EC: CoC – Type of bodywork and wheelbase for single-axle trailers

### Issue

Annex IX “CoC” of Directive 2007/46/EC (Commission Regulation (EC) No 385/2009)

How to fill out the CoC correctly

### Part A

According to the new format of CoC there are two different positions for the type of bodywork in case of special purpose vehicles:

- 38. Code for bodywork <sup>(i)</sup>: .....

(<sup>i</sup>) The codes described in Annex II Letter C shall be used.

- 51. For special purpose vehicles: designation in accordance with Annex II Section 5:

.....

There can be found different ways throughout Europe how to fill out the CoC.

### Question:

Assumed that it is best to agree on a common unique way for filling in the type of bodywork, it is the question, what is the best way.

### Possibilities of solution

### Comments

		<b>Field 38 and 51 should have the same content, for e.g. 38. SA and 51. SA</b>	There can be just one type of bodywork.
	<b>B</b>	<b>Field 38 gets the code according to the vehicle category and field 51 gets the special purpose category, for e.g. 38. DC and 51. SE</b>	It does not make sense to repeat the same code in two different CoC positions, so this solutions provides additional information, for e.g. in case of an armoured vehicle you can see if it's a Saloon or a Van.

**Type approving authority "e"**

Selection of solution		accepted	refused
	<b>A</b>		x
	<b>B</b>	x	

**Part B**

For Vehicle Categories O1 and O2 the CoC-format says:

- 4. Wheelbase ( e ): ..... mm

( e ) This entry shall be only completed when the vehicle has two axles.

Annex I says for the information document:

**2. MASSES AND DIMENSIONS (f) (g)**

(in kg and mm) (Refer to drawing where applicable)

**2.1. Wheelbase(s) (fully loaded) (g1):**

2.1.1. Two-axle vehicles: .....  
.....

2.1.1.1. Vehicles with three or more axles

2.1.1.1.1. Axle spacing between consecutive axles going from the foremost to the rearmost axle: .....  
.....

2.1.1.1.2. Total axle spacing: .....  
.....

(g1) Motor vehicle and drawbar trailer: term No 6.4.1.

Semi-trailer and centre-axle trailer: term No 6.4.2.

*Note:*

In the case of a centre-axle trailer, the axis of the coupling shall be considered as the foremost axle.

**Question:**

What is the correct form for filling out the CoC 4. Wheelbase in case of a single-axle trailer?

**Possibilities of solution**

**Comments**

<b>A</b>	<b>The wheelbase for a single-axle trailer is the distance between the coupling and the axle according to footnote g1 of Annex I</b>	
<b>B</b>	<b>A single-axle trailer has no wheelbase because of footnote e of Annex IX.</b>	Annex I is not relevant for Annex IX, especially not when there is a contradiction in the footnotes.

**Type approving authority "e"**      **1**

Selection of solution		accepted	refused
	<b>A</b>		x
	<b>B</b>	x	

**TAAM Minutes:**

**Question 1 (Part A)**

**Noting the necessity to await the outcome of Annex II discussions the meeting supported solution B.**

**Question 2 (Part B)**

**The meeting agreed that the wording should be changed/clarified. A Member State delegate reported that a question concerning this issue had already been submitted to the Commission and the meeting agreed to await the Commission's response. The development on this issue to be reported at the next TAAM.**

**5.8 2007/46/EC, Annex IX, Regulation (EC) No. 385/2009, Annex IX of Directive 2007/46/EC: Tyres, Load Capacity and speed symbol, wheel dimension**

**Background:**

Motorcaravan, Category M1, technically permissible axle load 2000 kg

Tyre/wheel combination according to 6.6.1.1.2 of the information document in the EC-WVTA:  
215/70R15CP 109/107Q, 6Jx15 offset 68 mm

Entry 32 of the COC according to Directive 70/156/EEC (2007/46/EC) reads:

“32. Tyres and wheels Axle 1: .. Axle 2: .. Axle 3: .. (for tyres of category Z intended to be fitted on vehicles whose maximum speed exceeds 300 km/h essential tyre characteristics shall be indicated)”

Most manufacturers of motor caravans makes the indication:

“32 Tyres and wheels: 1. 215/70R15  
2. 215/70R15”

Load capacity, speed symbol and wheel dimensions are missing.

NB: on several COC’s issued, based on the model of Regulation (EC) No. 385/2009 the same indication with missing data is done.

Standard tyres of Dimension 215/70R15 has a load capacity index of 98 (ETRTO, 98 = 1500 kg axle load , C-Tyres of 106/104 (ETRTO, 106/104= 1900 kg axle load for single tyres). Only CP-tyres have a sufficient LI of 109/107.

**Issue:**

If the tyre/wheel indication in the COC is only “215/70R15” the user might use any tyre of this Dimension, although the LI and the maximum permissible load of the tyre is too low. Any wheel may be used if the rim dimension is allowed for this tyre according to the recommendations of the tyre manufacturer or ETRTO. Both may lead to a serious risk.

NB: for “standard passenger cars” the manufacturers states LI, SI and complete wheel dimensions in their COC’s, nearly all manufacturers of Motor caravans don’t indicate LI/SI as well as wheel dimensions

**Question 1:**

What is the correct indication of the tyres in the COC?

**Question 1:**

What is the correct indication of the wheels in the COC?

Possibilities of solution

**Type approving authority "e"**

<b>Question 1</b>			accepted	refused
1	215/70 R15	<b>A</b>		x
1	215/70 R15C	<b>B</b>		x
1	215/70 R15CP	<b>C</b>		x
1	either “215/70 R15 109Q” or “215/70 R15C 109Q” or “215/70 R15CP 109Q”	<b>D</b>	x	
1	either “215/70 R15 109/107Q” or “215/70 R15C 109/107Q” or “215/70 R15CP 109/107Q”	<b>E</b>	x	

<b>Question 2</b>			accepted	refused

(no wheel dimension)	<b>F</b>		x
6Jx15	<b>G</b>		x
6Jx15 offset <sup>(1)</sup> 68	<b>H</b>	x	

<sup>(1)</sup> offset indicated in a manner that a technician knows that this is the offset

### **TAAM Minutes:**

#### **Question 1**

**There was some support for the proposal that tyre speed and load data should be included in the CoC but it was noted that the legislation does not specifically require this information to be included. It was therefore accepted that the legislation would need to be amended before this data could be mandated. In the meantime, this would be a matter for national 'in-use' regulation.**

#### **Question 2**

**In line with the logic used to answer Q1, it was also accepted that the legislation would need to be amended before this wheel data could be mandated. In the meantime, this would also be a matter for national 'in-use' regulation.**

**5.9 2007/46/EC, Annex II and XI: An ambulance constructed as a bus or a bus with places for sick or injured people**

**RELEVANT SECTION:**

Annex II item 5.3 'Ambulances' means motor vehicles of category M intended for the transport of sick or injured people and having special equipment for such purpose.

Annex XI appendix 1

**QUESTION:**

If you have a bus equipped with places for stretchers for transporting sick or injured people is it to be considered as a special purpose vehicle type ambulance according to 2007/46/EC or is it to be considered as a bus under the bus directive 2001/85/EC with the stretcher places excluded by the bus directive?

<b>A</b>	It is considered as a special purpose vehicle type ambulance according to 2007/46/EC	
<b>B</b>	It is considered as a bus under the bus directive 2001/85/EC with the stretcher places excluded by the bus directive	

Type approving authority "e"  

Selection of solution		accepted	refused
	<b>A</b>		
	<b>B</b>		

**TAAM Minutes:**

**It was clarified that this question referred to a vehicle with a space specifically designed for a stretcher (as opposed to a bus with a stretcher-sized space that could actually be used for any purpose). On the basis of this explanation, the meeting agreed with Solution A.**



## 5.10 70/221/EEC: Trailers O<sub>1</sub>, O<sub>2</sub> and rear underrun protection

### Directive or Regulation number:

70/221/EEC

### Subject:

Trailers O<sub>1</sub>, O<sub>2</sub> and rear underrun protection

### Reference to Annex, etc in the Directive or Regulation:

Annex II, paragraph 5.2

### Text:

5.1. All vehicles must be so constructed and/or equipped as to offer effective protection over their whole width against underrunning from the rear by a vehicle of categories M1 and N1 (1).

5.1a. The vehicle shall be tested under the following conditions: .....

5.2. Any vehicle in one of the categories M1, M2, M3, N1, O<sub>1</sub> or O<sub>2</sub> (1) will be deemed to satisfy the condition set out in 5.1:

— if it satisfies the conditions set out in 5.3, or

— if the ground clearance of the rear part of the unladen vehicle does not exceed 55 cm over a width which is not shorter than that of the rear axle by more than 10 cm on either side (excluding any tyre bulging close to the ground).

Where there is more than one rear axle, the width to be considered is that of the widest.

This requirement must be satisfied at least on a line at a distance of not more than 45 cm from the rear extremity of the vehicle.

5.3. Any vehicle in one of the categories N2, N3, O<sub>3</sub> or O<sub>4</sub> (1) will be deemed to satisfy the condition set out in 5.1 provided that:

— the vehicle is equipped with a special rear underrun protective device in accordance with the requirements of 5.4, or

— the vehicle is so designed and/or equipped at the rear that, by virtue of their shape and characteristics, its component parts can be regarded as replacing the rear underrun protective device. Components whose combined function satisfies the requirements set out in 5.4 are considered to form a rear underrun protective device.

### Questions:

#### Question 1

Can a type approval be accepted when the width is based on the loading platform instead of the axels/wheels (width of tyres cover up to 200 mm)?

#### Comment

The same question was introduced by a Member State to the TAAM meeting on 09–10 April 2008 in Leipzig. The decision agreed by the meeting has been the following: “Answer B (= No), the width of the underrun protection should not be shorter than that of the rear axle by more than 10cm on either side”, see the meeting report, point 7.14.

Nevertheless we have found out that since the above indicated decision in more cases category O<sub>1</sub> vehicles on which the wheels are located fully outside of the loading platform have been type approved with the underrun protection having the width of the loading platform only. These findings concern not only national type approvals but also EC type approvals, even an EC type approval of the vehicle according to Directive 2007/46/EC.

Because the respective text of the provision of the Directive is clear and does not need an interpretation, we repeat the question again with the aim of reconfirming the former decision of TAAM.

#### Question 2

Do you consider the said provision of the Directive technically doubtful for trailers O<sub>1</sub> (eventually O<sub>2</sub>) with the wheels fully outside the loading platform and do you agree TAAM should submit to Commission a proposal to amend the Directive consequently?

#### Comment

The actual wording of the Directive is a result of historical development. The requirements, originally applicable without distinction between categories of vehicles and different as far as the numerical values of the respective dimensions concerns, were repeatedly revised and the actual wording of the provision in question has been introduced by Directive 97/19/EC. It may be supposed that the actual provision for O1 and O2 was in principle overtaken from larger vehicles having different configurations of body (platform) in relation to axles where this provision is justifiable.

On the contrary for O1 (and, as the case may be, O2) trailers having the wheels located fully outside the platform (body) the present requirement may be considered of little relevance from the point of view of security and on the other hand as constituting unnecessary complications to manufacturers and price impacts to users. Therefore the width of the rear underrun protection based only on the loading platform (body) should be sufficient for the said vehicles.

<b>Solutions:</b>			
<b>Question 1</b>	A	Yes, a type approval can be accepted when the width of the underrun protection is based on the loading platform (body)	
	B	No, it is strictly necessary to fulfil the requirement of Annex II, paragraph 5.2 of the Directive	
<b>Question 2</b>	C	Yes, we agree TAAM should submit to Commission a proposal to amend the Directive in favour of a requirement more appropriate for O1 (O2) vehicles with the wheels fully outside the loading platform (body)	
	D	No, we are not in favour of amending the present requirements of Annex II, paragraph 5.2 of the Directive	

<b>Decision</b>		
<i>Solution</i>	<i>Accepted</i>	<i>Refused</i>
A		X
B	X	
C	X	
D		X

<b>Authority:</b>	
Type approval Authority e/E	

<b>Remarks:</b>



**TAAM Minutes:**

**Question 1**

**The delegates agreed with solution B and it was accepted that the current wording in the legislation is clear.**

**It was noted that this reinforces the agreement previously reached in respect of item 7.14 in the Agenda for the TAAM held in Leipzig in April 2008.**

**Question 2**

**The meeting recognised that it could be appropriate to amend the legislation for O category vehicles (and possibly also for other vehicle categories). A Member State delegate reported that a proposed amendment to R58 had already been submitted for consideration by GRSG.**

## 5.11 74/60/EC as amended by 2000/4/EC: Interior fittings

### EXEMPT AREA BEHIND STEERING WHEEL

#### BACKGROUND

Section 5.1 prescribes requirements for switches and controls in terms of radii, protrusion and cross sectional area.

It also refers to the reference zone which is the head impact zone defined by Annex I Section 2.3 and Annex II. Parts within the reference zone are subjected to impact tests according to the procedure described in Annex III (see paragraph 5.1.2)

Furthermore, Annex I Section 2.3 identifies some exempt areas within the reference zone - notably an area behind steering wheel.

#### QUESTION

A speedometer mounted behind the steering wheel within the exempt area (reference Annex I Section 2.3.1) has a chrome surrounding trim (bezel) that protrudes 5mm from the surface of the dashboard and is contactable by a freely held 165mm sphere.



What are the radius requirements for this chrome trim?

Possibilities of solution

Comments

A	<p>Parts in the zone behind the Steering Wheel are within the scope of Section 5.1 but are exempt from all of its requirements</p>	<p>Any parts contactable by a 165mm sphere must simply be blunted</p>
B	<p>Parts in the zone behind the Steering Wheel are within the scope of Section 5.1 and are only exempt from the impact test provisions prescribed in Paragraph 5.1.2</p> <p>The chrome surround is therefore covered by Annex I Section 5.1.4</p>	<p>Any parts contactable by a 165mm sphere must have a radius of at least 2.5mm</p>
C	<p>The chrome surround is outside the scope of Section 5.1 and is therefore covered by Section 5.3.2.1</p>	<p>The radius should be at least 3.2mm</p>

## LEGISLATION

74/60/EC as amended by 2000/4/EC

### ANNEX I

2.3. 'reference zone' means the head impact zone as defined in Annex II **except:**

2.3.1. ***the area bounded by the forward horizontal projection of a circle circumscribing the outer limits of the steering control, increased by a peripheral band 127 mm in width ; this area is bounded below by the horizontal plane tangential to the lower edge of the steering control when the latter is in the position for driving straight ahead***

*Note to points 2.3 and 2.3.1[78/632-10]:*

*The exemption defined by these points behind the steering wheel is also valid for the head impact area of the front passenger(s).*

*In the case of adjustable steering wheels the zone finally exempted is reduced to the common area of the exempted zones for each of the driving positions which the steering wheel may assume.*

*In the case where it is possible to choose between various steering wheels the exempted zone is determined by the use of the least favourable steering wheel having the smallest diameter.*

2.3.2. *the part of the surface of the instrument panel comprised between the edge of the area specified in point 2.3.1 above and the nearest inner side-wall of the vehicle; this surface is bounded below by the horizontal plane tangential to the lower edge of the steering control ; and*

2.3.3. *the windscreen side pillars*

### **5.1. FORWARD INTERIOR PARTS OF THE PASSENGER COMPARTMENT ABOVE THE LEVEL OF THE INSTRUMENT PANEL IN FRONT OF THE FRONT SEAT H POINTS, EXCLUDING THE SIDE DOORS.**

5.1.1. ***The reference zone defined in point 2.3 above must not contain any dangerous roughness or sharp edges likely to increase the risk of serious injury to the occupants. Those parts referred to in points 5.1.2 to 5.1.6 hereafter shall be deemed satisfactory if they comply with the requirements thereof.***

*Note to point 5.1.1[78/632-20]:*

*A sharp edge is an edge of a rigid material having a radius of curvature of less than 2.5 mm except in the case of projections of less than 3.2 mm, measured from the panel. In this case the minimum radius of curvature shall not apply provided the height of the projection is not more than half its width and its edges are blunted.*

*Grills are considered to comply with the regulations if they meet the minimum requirements of the following table.....*

5.1.2. *Vehicle parts within the reference zone with the exception of those which are not part of the instrument panel and which are placed at less than 10 cm from glazed surfaces shall be energy-dissipating as prescribed in Annex III. Those parts within the reference zone which satisfy both of the following conditions shall also be excluded from consideration:*

- *if, during a test in accordance with the requirements of Annex III, the pendulum makes contact with parts outside the reference zone ; and*
- *if the parts to be tested are placed less than 10 cm away from the parts contacted outside the reference zone, this distance being measured on the surface of the reference zone;*

*any metal support fittings shall have no protruding edges.*

*Note to point 5.1.2[78/632-21]:*

*During the test it is determined whether parts within the impact zone used for reinforcement may be displaced or protrude so as to increase the hazards to passengers or the severity of injuries.*

5.1.3. *The lower edge of the instrument panel, unless it meets the requirements of point 5.1.2 above, shall be rounded to a radius of curvature of not less than 19 mm.*

*Note to point 5.1.3[78/632-22]:*

*These two concepts (level and lower edge of the instrument panel) may be distinct. However, this paragraph is included in point 5.1 (... above the level of the instrument panel...) and, therefore, is applicable only where these two concepts are combined. In the case where the two concepts are not combined, i.e. where the bottom edge of the instrument panel is located below the level of the instrument panel, it will be considered under point 5.3.2.1 by reference to point 5.8*

5.1.4. ***Switches, pull-knobs, etc., made of rigid material, which, measured in accordance with the method described in Annex V from 3.2 mm to 9.5 mm from the panel, shall have a cross-sectional area of not less than 2 cm<sup>2</sup>, measured 2.5 mm from the point projecting furthest, and shall have rounded edges with a radius of curvature of not less than 2.5 mm.***

*Note to point 5.1.4[78/632-23]:*

*If a pull handle or knob has a width dimension equal to or more than 50 mm and is located in a zone such that if it were less than 50 mm in width the maximum projection would be determined using the headform measuring apparatus with point 2 of Annex V, the maximum projection shall be determined in accordance with point 1 of Annex V, i.e. by using a 165 mm diameter sphere and determining the maximum variation in height of the 'y' axis.*

*The cross-sectional area shall be measured in a plane parallel to the surface on which the component is mounted.*

5.1.5. *If these components project by more than 9.5 mm from the surface of the instrument panel, they shall be so designed and constructed as to be able, under the effect of a longitudinal horizontal force of 37.8 daN delivered by a flat ended ram of not more than 50 mm diameter either to retract into the surface of the panel until they do not project by more than 9.5 mm or to become detached ; in the latter case no dangerous projections of more than 9.5 mm shall remain ; a cross-section not more than 6.5 mm from the point of maximum projection shall be not less than 6.50 cm<sup>2</sup> in area.*



*Note to point 5.1.5[78/632-24]:*

*Points 5.1.4 and 5.1.5 complement each other; the first sentence of point 5.1.5 (i.e. a force of 37.8 daN for retraction or detachment) is applied and then point 5.1.4 in case of retraction up to a protrusion between 3.2 and 9.5 mm or, in the case of detachment, the two last sentences of point 5.1.5 (the cross-section area is measured before the force is applied). However, if, under practical circumstances point 5.1.4 must be applied (retraction to under 9.5 mm and over 3.2 mm), it could be more convenient, at the manufacturer's discretion, to verify the specifications of point 5.1.4 before applying the force of 37.8 daN specified in point 5.1.5.*

- 5.1.6. *In the case of a projection consisting of a component made of non-rigid material of less than 50 shore A hardness mounted on a rigid support, the requirements of points 5.1.4 and 5.1.5 shall apply only to the rigid support.*

*Note to point 5.1.6[78/632-25]:*

*Since in the presence of soft materials, the requirements apply only to the rigid support, the projection is measured for the rigid support only.*

*The Shore hardness measurement is made on samples of the test subject itself. Where, due to the condition of the material it is impossible to carry out a hardness measurement by the Shore A procedure, comparable measurements shall be used for evaluation.*

### **5.3. OTHER INTERIOR FITTINGS IN THE PASSENGER COMPARTMENT IN FRONT OF THE TRANSVERSE PLANE PASSING THROUGH THE TORSO REFERENCE LINE OF THE MANIKIN PLACED ON THE REARMOST SEATS**

*Note to point 5.3[78/632-33]:*

*'Other parts' shall include such parts as window catches, seat belt upper anchorages and other parts located in the foot space and at the door side, unless these parts have been treated previously or are exempted in the text.*

#### **5.3.1. Scope**

*The requirements of point 5.3.2 below shall apply to control handles, levers and knobs and to any other protruding objects not referred to in points 5.1 and 5.2 above (see also under 5.3.2.2).*

#### **5.3.2. Requirements**

*If the items referred to in point 5.3.1 are so placed that occupants of the vehicle can contact them, they shall meet the requirements of points 5.3.2.1 to 5.3.4. If they can be contacted by a 165 mm diameter sphere and are above the lowest H point (see Annex IV) of the front seats and forward of the transverse plane of the torso reference line of the manikin on the rearmost seat, and outside the zones defined in points 2.3.1 and 2.3.2, these requirements shall be considered to have been fulfilled if[78/632-35]:*

*Note to point 5.3.2[78/632-36]:*

*That space between the forward bulkhead and the instrument panel which is located higher than the bottom edge of the instrument panel is not subject to the specifications of point 5.3.*

**5.3.2.1. Their surface shall terminate in rounded edges, the radii of curvature being not less than 3.2 mm.**

*Note to point 5.3.2.1[78/632-37]:*

*The 3.2 mm radius applies to all contactable components covered by point 5.3 when considered in all positions of use.*

*As exceptions glove compartments shall be considered only in the dosed position, seat belts will normally be considered only in the fastened position but any part which has a fixed stowage position shall also comply with the 3.2 mm radius requirement in that stowed position.*

**5.3.2.2. Control levers and knobs shall be so designed and constructed that, under the effect of a forward-acting longitudinal horizontal force of 37.8 daN either the projection in its most unfavourable position shall be reduced to not more than 25 mm from the surface of the panel or the said fittings shall become detached or bent : in the two latter cases no dangerous projections shall remain.**

*Window winders may, however, project 35 mm from the surface of the panel.*

*Note to point 5.3.2.2[78/632-38]:*

*The reference surface is found by application of the device described in point 2 of Annex V with a force of 2 daN. Where this is not possible the method described in point 1 of Annex V shall be used with a force of 2 daN.*

*The evaluation of dangerous projections is subject to the discretion of the authority responsible for the tests.*

*The force of 37.8 daN is applied even if the original projection is less than 35 or 25 mm, as applicable. The projection is measured under the applied load.*

*The horizontal, longitudinal force of 37.8 daN is normally applied by means of a flat-ended ram of not more than 50 mm diameter, but where this is not possible an equivalent method may be used; for instance, by removing obstacles.*

## **ANNEX II - DETERMINATION OF THE HEAD-IMPACT ZONE**

*The head-impact zone shall comprise all the non-glazed surfaces of the interior of a vehicle which are capable of entering into static contact with a spherical head 165 mm in diameter which is an integral part of a measuring apparatus whose dimensions from the pivotal point of the hip to the top of the head is continuously adjustable between 736 mm and 840 mm.*

**TAAM Minutes:**

**The majority of delegates agreed with Solution A.**

## 5.12 2007/46/EC and 74/483/EEC: Exterior projections for motor-caravans

- **Regulation number:**

- DIRECTIVE 2007/46/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles
- Council Directive 74/483/EEC of 17 September 1974 on the approximation of the laws of the Member States relating to the external projections of motor vehicles

- **Text of Directive 74/483/EC**

**Annex I :**

*1.2. The purpose of these provisions is to reduce the risk or seriousness of bodily injury to a person hit by the bodywork or brushing against it in the event of a collision. This is valid both when the vehicle is stationary and in motion.*

**6.14. Windows**

*6.14.1. Windows which move outwards from the external surface of the vehicle shall comply with the following provisions **in all positions of use:***

*6.14.1.1. no exposed edge shall face forwards;*

*6.14.1.2. no part of the window shall project beyond the extreme outer edge of the vehicle.*

- **Issue**

According to Annex XI of directive 2007/46/EC, motor-caravans shall comply with directive 74/483/EC, with the level of the letter A for the vehicle excluding the cab.

Letter A means “*Exemption permitted where special purposes make it impossible to fully comply. The manufacturer shall demonstrate this to the satisfaction of the type-approval authority that the vehicle cannot meet the requirements due to its special purpose* » (2007/46, annex XI).

Manufacturers of motor-caravans and also trailer caravans may install this kind of windows on the sides of their vehicles.



Is it allowed to grant an approval for a motor-caravan equipped with such a windows ?

**Possibilities of solution**

**Comments**

A	No, because this kind of windows do not comply with 74/483/EC	When its open, there is clearly a risk. Window which fulfils requirements do exist.
B	Yes, because this kind of windows complies with 74/483/EC	
C	Other solution	

<b>1.2. Type approving authority « e »</b>	
--	--

Selection of solutions		Accepted	Refused
	A	<b>X</b>	
	B		<b>X</b>
	C		x

**TAAM Minutes:**

It was confirmed that this question refers specifically to motor caravans and hence to the opportunity for derogation provided by Footnote A in Annex XI of 2007/46/EC. The meeting discussion therefore concentrated only on windows used for the living compartment of a motor caravan. It was noted that 74/483/EEC is not applicable for trailer caravans.

Some delegates considered that there was nothing inherent in the design of a motor caravan that prevented compliance with paragraph 6.14 in Annex I of 74/483/EEC.

However, other delegates pointed out that outward opening windows with top mounted hinges were necessary to allow the windows to open to provide ventilation and yet prevent rain entering the living compartment during rain storms.

There was general acceptance that these windows would only be open when the vehicle is stationary but it was also recognised that the provisions of 74/483/EEC are applicable both when the vehicle is stationary and in motion.

Some delegates noted that top mounted hinges have been a typical design feature of motor caravans (and trailer caravans) for many years and that any change could have significant cost implications for the industry.

**The mixed opinions continued throughout the discussion and no consensus could be reached. It was therefore agreed to defer this question to the next TAAM in order to give delegates further time for consideration.**

**It was also agreed to explore the possibility to address the issue at other proper expert forum for discussion.**

## **5.13 76/756/EEC as amended by 2008/89/EC: Vehicle lighting**

### **HEIGHT OF S3 OR S4 STOP LAMPS**

#### **BACKGROUND**

The mounting height for the lower edge of an S3 or S4 stop lamp is prescribed to be either not be more than 150 mm below the bottom of the rear window glazing or not less than 850 mm above the ground.

#### **DISCUSSION**

The option to mount the lamp just below the lower edge of the rear window provides an opportunity to avoid unnecessary obstruction to the driver's rearward vision.

There are some specialist sports cars that are sold without a roof and hence without rear glazing.

In the case of these vehicles it could be argued that the open area above the rear bodywork provides rearward vision to the driver and that this open area could therefore be considered to be equivalent to the rear window glazing.

In other words, an S3 or S4 stop lamp could be mounted such that its lower edge could be up to 150 mm below the top of the rear bodywork. This would avoid obstruction to the driver's rear field of vision that could otherwise occur if the S3 or S4 stop lamp is mounted at the specified 850mm height.



Possible location for S3/S4 stop lamp

**QUESTION**

Can the mounting height for the lower edge of S3 or S4 stop lamps be allowed to be 150 mm below the bottom of the top of the rear bodywork in the case of open vehicles without a roof/rear glazing?

**Possibilities of solution**

**Comments**

A	Yes	The open area above the bodywork provides rearward vision to the driver which, in the context of this question, can be considered to be equivalent to the rear window glazing
B	No	There is no rear window and the height for the lower edge of S3 or S4 stop lamps must therefore be not less than 850 mm above the ground.

## LEGISLATION

76/756/EEC as amended by 2008/89/EC

### **6.7. STOP LAMP (REGULATION NO. 7)**

#### **6.7.1. Presence**

*Devices of S1 or S2 categories :  
mandatory on all categories of vehicles.*

*Devices of S3 or S4 category :  
mandatory on M<sub>1</sub> and N<sub>1</sub> categories of vehicles, except for chassis-cabs and those N<sub>1</sub> category vehicles with open cargo space; optional on other categories of vehicles.*

#### **6.7.4. Position**

**6.7.4.2. In height:**

**6.7.4.2.1.** *For S1 or S2 categories devices: above the ground, not less than 350 mm nor more than 1,500 mm (2,100 mm if the shape of the bodywork makes it impossible to keep within 1,500 mm and if the optional lamps are not installed).*

*If the optional lamps are installed, they shall be positioned at a height compatible with the requirements of the width and the symmetry of the lamps, and at a vertical distance as large as the shape of the bodywork makes it possible, but not less than 600 mm above the mandatory lamps.*

**6.7.4.2.2.** *For S3 or S4 categories devices, the horizontal plane tangential to the lower edge of the apparent surface shall:*

*either not be more than 150 mm below the horizontal plane tangential to the lower edge of the exposed surface of the glass or glazing of the rear window,*

*or*

*not be less than 850 mm above the ground.*

*However, the horizontal plane tangential to the lower edge of the apparent surface of a S3 or S4 categories devices shall be above the horizontal plane tangential to the upper edge of the apparent surface of S1 or S2 categories devices.*

#### **TAAM Minutes:**

**After some discussion, the consensus view of the meeting was in agreement with Solution A as a pragmatic solution.**



## 5.14 94/20/EC and UN/ECE Regulation No 55

Fastening of the breakaway cable with the function of 1.) a secondary coupling or 2.) a device to enable the trailer to be stopped automatically in the event of separation of the main coupling.

---

### Issue

By the stipulations of article 19 of Regulation (EC) No 661/2009 the application of Directive 94/20/EC to new vehicles, new components and separate technical units will be repealed at the 1<sup>th</sup> November 2014. Due to this the variation of the requirements of Directive 94/20/EC and UN/ECE Regulation No 55 will become more important.

UN/ECE Regulation No 55 section 1.5 of Annex 5 defines:

“Manufacturers of towing brackets shall incorporate attachment points to which either **secondary couplings** or **devices** necessary to enable the **trailer to be stopped automatically** in the event of separation of the main coupling, may be attached.”

In this section of Regulation 55 follows a reference to UN/ECE Regulation No 13 paragraph 5.2.2.9.

UN/ECE Regulation No 13 paragraph 5.2.2.9 reads:

“The braking system shall be such that the trailer is stopped automatically if the coupling separates while the trailer is in motion. However, this provision shall not apply to trailers with a maximum mass not exceeding 1,5 tonnes, on the condition that the trailers are equipped with, in addition to the coupling device, a **secondary coupling** (chain, wire rope. etc.) capable, in the event of separation of the main coupling, to prevent the drawbar from touching the ground and providing some residual steering action on the trailer.”

Directive 94/20/EC does not comprise any stipulations regarding attachment points for **secondary couplings** or **devices to enable trailer to be stopped automatically**.

In a Member State praxis the requirements of Regulation No 13 are frequently meet in the way that a breakaway cable is twined around the ball neck of a mechanical coupling device type approved in accordance with Directive 94/20/EC.

### Question:

Are the stipulations of UN/ECE Regulation No 55 section 1.5 of Annex 5 fulfilled by the possibility to twine a breakaway cable around the ball neck? Does it matter if breakaway cable is used as a **secondary coupling** or as a **device** necessary to enable the **trailer to be stopped automatically**?

### Prescription

UN/ECE Regulation No 55 and Directive 94/20/EC

**Possibilities of solution**

**Comments**

	Attachment of the breakaway cable to the ball neck is sufficient. The function of the breakaway cable does not matter.	There is no attachment point not connected to the main coupling. This follows the general practice in a Member State however it contradicts the wording of Regulation No 55.
<b>B</b>	Attachment of the breakaway cable to the ball neck is only sufficient in case that the breakaway cable has the function of a <b>device to enable trailer to be stopped automatically.</b>	Malfunction of the main coupling can not become the reason for malfunction of the <b>secondary coupling</b> . After the trailer brakes are triggered it may not be all-important to have a connection between trailers and motor vehicle.
<b>C</b>	Irrespective of its function is an attachment of the breakaway cable to the ball neck not sufficient.	This solution would follow the wording of Regulation No 55 but contradict the current general praxis at least in a Member State.

Type approving authority "e"

Selection of solution		accepted	refused
	<b>A</b>		x
	<b>B</b>	x	
	<b>C</b>		x

**TAAM Minutes:**

**During the debates it was noted that a secondary coupling needs a second point and just fix the wire to the ball neck is not sufficient. Breakaway cable is sufficient but on the second point.**

**As a result of the discussion general agreement was reached, namely that for R55 approval, the legislative wording does not provide scope for interpretation and the meeting supported Solution C.**

## 5.15 2007/46/EC and 97/27/EEC: Registration masses

### REGISTRATION MASSES IN EACH MEMBER STATES

- **Regulation number:**

-Directive 2007/46/EC amended EC/661/2009 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles.

-Directive 97/27/EEC amended 2003/19/EC relating to the masses and dimensions of certain categories of motor vehicles and their trailers

- **Text of Directive 2007/46/EC**

#### ANNEX III

[...]

2. 16. *Intended registration/ in service maximum permissible masses (optional: where these values are given, they shall be verified in accordance with the requirements of Annex IV to Directive 97/ 27/ EC)*

[...]

- **Text of Directive 97/27/EEC amended 2003/19/EC**

#### ANNEX IV

##### 1. Definitions

[...]

1. 1. *'Registration/ in-service maximum permissible laden mass'*

*means the maximum mass of the laden vehicle at which the vehicle itself can be registered or put into service in a Member State at the request of the vehicle manufacturer.*

1. 1. 1. *For any technical configuration of the vehicle type, as defined by one set of the possible values of the items laid down in the information document in Annex II to this Directive, a set of intended registration /in-service maximum permissible laden masses may be given by the vehicle manufacturer at the time of the approval under this Directive so that they can be verified beforehand according to the requirements of section 2 of this Annex by the approval authority.*

1. 1. 2. *Each of the Member States' authorities must, for their respective country, determine the registration/ in-service maximum permissible laden mass of a given vehicle according to the following principles:*

*- by definition, only one registration/ in-service maximum permissible laden mass may be attributed to one given technical configuration of the vehicle type as defined by one set of the possible values of the items laid down in the information document in Annex II to this Directive,*

*- the registration/ in-service maximum permissible laden mass is determined as the greatest mass inferior or equal to the technically permissible maximum laden mass and to the relevant vehicle maximum authorised mass in force in that Member State (or a lower mass at the request of the manufacturer in agreement with the Member State' s authorities), and which complies with the requirements laid down in section 2 of this Annex.*

- **Issue**

Many manufacturers do not fill in 2.16 about registration masses in their information document for whole vehicle type approval. However authorities may asks a validation of section 2 of annex IV of 97/27/EEC amended. Authorities may also attributed only registration masses to each technical configuration, i.e. type/variant/version combination (TVV).

1. Do you require a calculation in application of section 2 of annex IV for registration?
2. Do you allow more than one registration masses for each TVV?

**Possibilities of solution**

**Comments**

1	A	No, we do not require any calculation for registration.	It is manufacturer responsibility when he declares registration masses in CoC.
	B	Yes, we do require a calculation which has to be validated by authority or a technical laboratory.	
2	C	Yes, we do allow more than 1 registration mass for each TVV	
	D	No, we do not allow more than 1 registration mass for each TVV	

**Type approving authority « e »**

Selection of solutions		Accepted	Refused
	A	X	
	B		X
	C		X
	D	X	

**TAAM Minutes:**

**Question 1**

The meeting recognised a distinction between the masses quoted in a vehicle's Type Approval documents and the values quoted in the respective national registration documents for that vehicle type.

It was confirmed that the values quoted in the registration documents must be with the range covered by the EC Whole Vehicle approval.

It was also recognised that a manufacturer is not mandated to provide data for Section 2.16 of the information document but if data is supplied it must be verified in accordance with the requirements of Annex IV to Directive 97/27/EC.

**Question 2**

The meeting accepted that the TVV definitions in Annex II of 2007/46/EC refer only to 'technically permissible maximum laden mass' and not to 'registration mass'. Hence, it would be acceptable for one TVV to cover more than one registration mass but only one value should be quoted in the national registration documents for that vehicle.

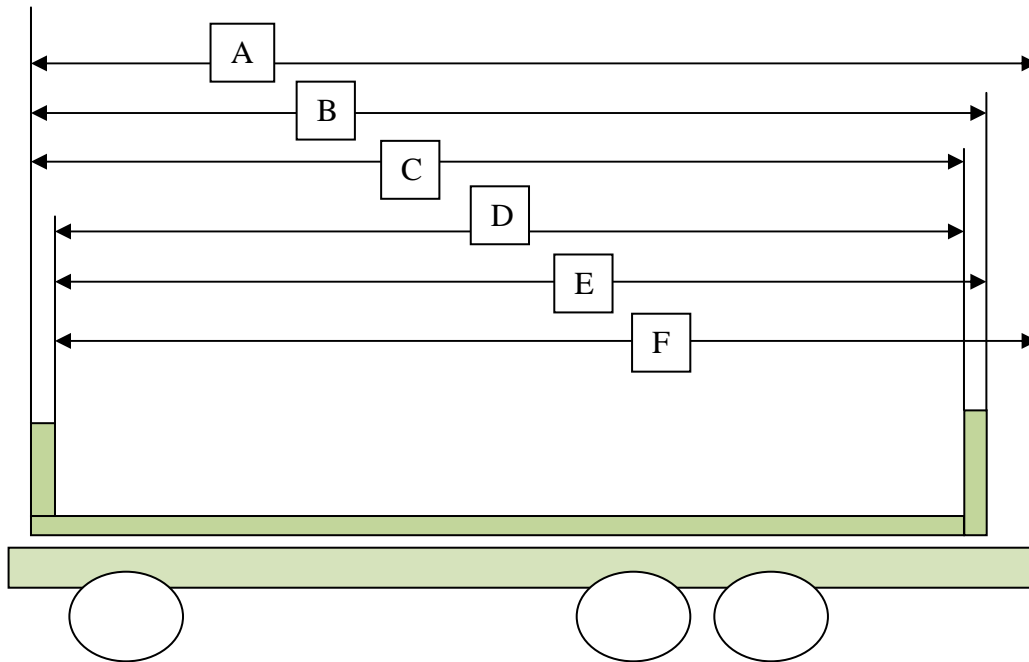
It was noted that, for national in-use purposes, some Member States will carry out their own calculations.

## 5.16 2007/46/EC and 97/27/EC: Definition of length of the loading area

### RELEVANT SECTIONS:

DIRECTIVE 2007/46/EC annex IX item 11. *Length of the loading area: ..... mm*

DIRECTIVE 97/27/EC item 2.4.4 ‘Length of the loading area’ of a vehicle other than a semi-trailer tractor or semi-trailer means the distance from the foremost external point of the loading area to the rearmost external point of the vehicle, measured horizontally in the longitudinal plane of the vehicle.



### QUESTION:

The text in item 2.4.4 seems to point out that measurement **A** in the picture is according to the directive, but our question is if not measurement **D** should be correct since it shows the actual length of the loading area while measurement **A** shows the outer dimensions.

Type approving authority "e"  

Selection of solution		accepted	refused
	<b>A</b>		
	<b>B</b>		
	<b>C</b>		
	<b>D</b>		
	<b>E</b>		

### TAAM Minutes:

The meeting had some sympathy for the view expressed in this question.

However, the meeting majority considered that the wording in 97/27/EC (Annex I, item 2.4.4) does not provide flexibility and the meeting therefore agreed that the length of the loading area should be quoted according to Dimension “A”.

## 5.17 97/27/EC: Masses and dimensions

### **RELEVANT SECTION:**

Annex 1 item 2.6 *By definition, only one technically permissible maximum laden mass may be attributed to a given technical configuration of the vehicle type as defined by one set of the possible values of the items laid down in the information document in Annex II to this Directive. This definition — one value only — applies to the relevant technical requirements of sections 2.7, 2.8, 2.10, 2.11 and 2.12 as appropriate.*

### **QUESTION:**

How should the wording technical configuration be understood? The Agency of one of the Member States considers that different technical configurations mean that there actually must be technical differences. Item 2.6 points out the sections 2.7 *Technically permissible maximum mass on the axle*, 2.8 *Technically permissible maximum mass on a group of axles*, 2.10 *Technically permissible maximum towable mass* and 2.12 *Technically permissible maximum mass on the coupling point of a semi-trailer or centre-axle trailer*.

This is obviously applied differently in different member states and we think it is important that we have the same interpretation.

A	Technical configurations mean actual differences in the vehicles, i.e. different axles, coupling devices, length a.s.o.	
B	Technical configurations may consist of different values given by the manufacturer for identical vehicles	

Type approving authority "e"

Selection of solution		accepted	refused
	<b>A</b>		
	<b>B</b>		

### **TAAM Minutes:**

**Taking account of the words in 97/27/EC Annex I, item 2.6, the majority of the meeting delegates were in support of Solution A.**

## 5.18 2005/55/EC: WVTA containing Euro IV engines

- **Regulation number :**

Directive 2005/55/EC last amended 2008/74/EC relating to the measures to be taken against the emission of gaseous and particulate pollutants from compression-ignition engines for use in vehicles, and the emission of gaseous pollutants from positive-ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles

- **Text of Directive 2005/55/EC last amended 2008/74/EC**

### **Article 2**

[...]

2. *Except in the case of vehicles and engines intended for export to third countries or replacement engines for in-service vehicles, Member States shall, where the requirements set out in Annexes I to VIII are not met and in particular where the emissions of gaseous and particulate pollutants and opacity of smoke from the engine do not comply with the limit values set out in row A of the tables in Section 6.2.1 of Annex I:*

*(a) consider certificates of conformity which accompany new vehicles or new engines pursuant to Directive 70/156/EEC as no longer valid for the purposes of Article 7(1) of that Directive; and*

*(b) prohibit the registration, sale, entry into service or use of new vehicles propelled by a compression-ignition or gas engine and the sale or use of new compression-ignition or gas engines*

- **Issue**

Considering engines intended for import to third countries, can we still deliver Whole Vehicle Type Approval (WVTA) for vehicles containing Euro IV engines?

### **Possibilities of solution**

### **Comments**

	<b><u>Possibilities of solution</u></b>	<b><u>Comments</u></b>
A	Yes, WVTA for vehicles can still include Euro IV engines with the provision that these vehicles can only be sold in third countries	The risk is to sell Euro IV vehicle in the European Union. A COC for such an approval might be used for registration in EU.
B	No, WVTA shall not contain Euro IV engines anymore	Only system approval for these Euro IV engines is allowed according to the 2005/55/EC directive. 2007/46/EC does not contain any exemption in order to grant a WVTA for 3 <sup>rd</sup> countries with invalid systems approvals. It becomes even more complicated when such an exemption is given to a specific version in a WVTA containing also valid motor.



Type approving authority « e »	
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Selection of solutions		Accepted	Refused
	A		X
	B	X	

**TAAM Minutes:**

The meeting recognised that, whilst Euro IV engine approvals can remain valid for vehicles and engines intended for export to third countries or for replacement engines for in-service vehicles, they do not remain valid for use in vehicles covered by EC Whole Vehicle Type Approval.

The TAAM delegates therefore agreed with Solution B.

**5.19 715/2007/EC: Information about repair and maintenance and fuel consumption especially for Electric and H<sub>2</sub> vehicles**

Regulation 715/2007 is taking care about the emissions, (CO<sub>2</sub> emissions -fuel consumption) and the access to repair and maintenance information. Since more and more electric and hybrid vehicles enter the market it is in our understanding not yet clear what kind of maintenance information are necessary to be provided by the manufacturer. [And in addition in the case of Multistage vehicles (MSV) by which manufacturer]

Also the regulation makes clear, that for hybrids and electric vehicles the energy consumption is to be measured. For all vehicles reg. R101 is the reference for testing – but for vehicles using a fuel cell the reg. R 101 is not ideally applicable. The EU-KOM stated in the note from 30.6.2009 that Fuel-cell vehicles are exempted from the (EC) 715/2007. According to Annex 8 of R 101 the TS could test H<sub>2</sub> vehicles but it seems to be the case that the provisions are based on using H<sub>2</sub> in combustion engines. A possibility would be to state the energy consumption by using ISO 23828 (Fuel Cell Road Vehicles - Energy Consumption Measurement - Vehicles Fuelled With Compressed Hydrogen) which is far more suitable.

**Prescription**

**Regulation (EC) 715/2007; KOM reg. (EC) 692/2008**

**Possibilities of solution**

**Comments**

		All necessary repair and maintenance information have to be prepared by the manufacturer also for electric vehicles	
	<b>B</b>	In the case of MSV, every stage-manufacturer has to provide the data for his specific change of stage	.
	<b>C</b>	The solution to provide the energy consumption according to the ISO 23828 for the time being is acceptable	

**Type approving authority "e"**  

Selection of solution		accepted	refused
	<b>A</b>	X	
	<b>B</b>	X	
	<b>C</b>	X	

**TAAM Minutes:**

**The meeting confirmed that the requirements concerning Repair and Maintenance information in Regulation EC/715/2007 are separate from the provisions concerning exhaust emissions and the meeting therefore agreed with both Solutions A and B.**

**The meeting agreed that, whilst R101 covers the direct combustion of Hydrogen in an internal combustion engine, Fuel Cell vehicles are not actually within the scope of ECE R101.**

**The meeting also agreed that ISO 23828 could not be mandated unless the EC legislation is amended accordingly.**

**An additional point raised for further consideration concerned the approval number format for EC/715/2007 that should be used for electric and fuel cell vehicles that have zero vehicle emissions. If necessary, this will be raised again at the next TAAM.**

## 5.20 715/2007/EC: Letter F and California Code

- 1) Possibility to grant an approval for direct injection positive ignition engines (letter F)
- 2) Minimum letter to be distributed to vehicles approved under the California Code (small series)

### Issue

1) The discussions in Brussels which are not yet finished concerning the matter of repair and maintenance information are still blocking the official publishing of the COM-Reg which amend the emissions regulation (EC) 715/2007. Provisions for the testing/counting of carbon particles are already agreed. (A necessary revised/new measurement procedure is ready, see results of the MVEG)

**Reference:** (See also attachment [TimeTable.....pdf](#))

Table 1  
Euro 5 Emission Limits

Category	Class	Reference mass (RM) (kg)	Limit values													
			Mass of carbon monoxide (CO)		Mass of total hydrocarbons (THC)		Mass of non-methane hydrocarbons (NMHC)		Mass of oxides of nitrogen (NO <sub>x</sub> )		Combined mass of hydrocarbons and oxides of nitrogen (THC + NO <sub>x</sub> )		Mass of particulate matter <sup>(1)</sup> (PM)		Number of particles <sup>(2)</sup> (P)	
			L <sub>1</sub> (mg/km)		L <sub>2</sub> (mg/km)		L <sub>3</sub> (mg/km)		L <sub>4</sub> (mg/km)		L <sub>2</sub> + L <sub>4</sub> (mg/km)		L <sub>5</sub> (mg/km)		L <sub>6</sub> (#/km)	
			PI	CI	PI	CI	PI	CI	PI	CI	PI	CI	PI	CI	PI	CI
M	—	All	1 000	500	100	—	68	—	60	180	—	230	5,0/4,5	5,0/4,5	—	6,0 × 10 <sup>11</sup>
N <sub>1</sub>	I	RM ≤ 1 305	1 000	500	100	—	68	—	60	180	—	230	5,0/4,5	5,0/4,5	—	6,0 × 10 <sup>11</sup>
	II	1 305 < RM ≤ 1 760	1 810	630	130	—	90	—	75	235	—	295	5,0/4,5	5,0/4,5	—	6,0 × 10 <sup>11</sup>
	III	1 760 < RM	2 270	740	160	—	108	—	82	280	—	350	5,0/4,5	5,0/4,5	—	6,0 × 10 <sup>11</sup>
N <sub>2</sub>	—	All	2 270	740	160	—	108	—	82	280	—	350	5,0/4,5	5,0/4,5	—	6,0 × 10 <sup>11</sup>

Key: PI = Positive Ignition, CI = Compression Ignition

<sup>(1)</sup> A revised measurement procedure shall be introduced before the application of the 4,5 mg/km limit value.

<sup>(2)</sup> A new measurement procedure shall be introduced before the application of the limit value.

<sup>(3)</sup> Positive ignition particulate mass standards shall apply only to vehicles with direct injection engines.

### Footnotes:

Key: PI = Positive Ignition, CI = Compression Ignition

- (1) A revised measurement procedure shall be introduced before the application of the 4,5 mg/km limit value.
- (2) A new measurement procedure shall be introduced before the application of the limit value.
- (3) Positive ignition particulate mass standards shall apply only to vehicles with direct injection engines.

One of the Member States until now regrets to approve such PI-engined vehicle under the letter F because of the lack of officially published measurement methods! But since the discussions last now for about half a year or longer, vehicle manufacturers get into heavy problems. They do have to plan their SoPs and build vehicle on the base of approvals of 'letter F-level' or higher. (See time table). Their time is running out and they might no longer be willing to 'accept' the delay.

All tests are possible to be made. Repair and maintenance info do have to be on the internet 6 month later.

An gentleman-agreement to grant from now on approvals for PI-DI-engined vehicles might be appropriate.

2) Article 3.3 of COM-Regulation 692/2008 allows small volume manufacturers to apply for an emission approval using the California Code standards:

.....

3. As an alternative to the requirements contained in Annexes II, III, V to XI and XVI, small volume manufacturers may request the granting of EC type-approval to a vehicle type which was approved by an authority of a third country on the basis of the legislative acts set out in Section 2.1 of Annex I.

The emissions tests for roadworthiness purposes set out in Annex IV, tests fuel consumption and CO2 emissions set out in Annex XII and the requirements for access to vehicle OBD and vehicle repair and maintenance information set out in Annex XIV shall still be required to obtain EC type-approval with regard to emissions and vehicle repair and maintenance information under this paragraph.

The approval authority shall inform the Commission of the circumstances of each type approval granted under this paragraph.

.....

Annex 1

.....

## 2. ADDITIONAL TECHNICAL REQUIREMENTS AND TESTS

### 2.1. Small volume manufacturers

2.1.1. List of legislative acts referred to in Article 3(3):

#### **Legislative Act**

#### **Requirements**

The California Code of Regulations, Title 13, Sections 1961(a) and 1961(b)(1)(C)(1) applicable to 2001 and later model year vehicles, 1968.1, 1968.2, 1968.5, 1976 and 1975, published by Barclay's Publishing	Type-approval must be granted under the California Code of Regulations applicable to the most recent model year of light-duty vehicle.
--	--

A Member State propose to grant an approval under Reg. (EC) 715/2007 with the minimum possible (relevant to the possible registration) level of emissions (today category of letter A).

#### **Prescription**

Regulation (EC) 715/2007; KOM reg. (EC) 692/2008

#### **Possibilities of solution**

#### **Comments**

1)		It shall be possible for the time being to grant an approval for Direct Injection PI engines before the KOM Reg. is published in the official journal.	This is important for the level/letter F!
2)	A	The minimum possible (for registration) level of emissions shall be the basement to grant an approval using Art. 3. (3)	This is today the category/level of letter A

**Type approving authority "e"**

Selection of solution		accepted	refused
	<b>1) A</b>	X	
	<b>2) A</b>	X	

#### **Attachment [TimeTable](#)**

## Appendix 6

## EC Type -Approval Certification Numbering System

1. Section 3 of the EC type-approval number issued according to Article 6(1) shall be composed by the number of the implementing regulatory act or the latest amending regulatory act applicable to the EC type-approval. This number shall be followed by an alphabetical character reflecting the different vehicle categories in accordance with table 1 below. These alphabetical characters shall also distinguish the Euro 5 and 6 emission limit values to which the approval was granted.

Table 1

Character	Emissions standard	OBO standard	Vehicle category and class	Engine	Implementation date: new types	Implementation date: new vehicles	Last date of registration
A	Euro 5a	Euro 5	M, N <sub>1</sub> class I.	PI, CI	1.9.2009	1.1.2011	31.12.2012
B	Euro 5a	Euro 5	M <sub>1</sub> to fulfil specific social needs (excluding M <sub>1</sub> G)	CI	1.9.2009	1.1.2012	31.12.2012
C	Euro 5a	Euro 5	M <sub>1</sub> G to fulfil specific social needs	CI	1.9.2009	1.1.2012	31.8.2012
D	Euro 5a	Euro 5	N <sub>1</sub> class II	PI, CI	1.9.2010	1.1.2012	31.12.2012
E	Euro 5a	Euro 5	N <sub>1</sub> class III, N <sub>2</sub>	PI, CI	1.9.2010	1.1.2012	31.12.2012
F	Euro 5b	Euro 5	M, N <sub>1</sub> class I.	PI, CI	1.9.2011	1.1.2013	31.12.2013
G	Euro 5b	Euro 5	M <sub>1</sub> to fulfil specific social needs (excluding M <sub>1</sub> G)	CI	1.9.2011	1.1.2013	31.12.2013
H	Euro 5b	Euro 5	N <sub>1</sub> class II	PI, CI	1.9.2011	1.1.2013	31.12.2013
I	Euro 5b	Euro 5	N <sub>1</sub> class III, N <sub>2</sub>	PI, CI	1.9.2011	1.1.2013	31.12.2013
J	Euro 5b	Euro 5+	M, N <sub>1</sub> class I.	PI, CI	1.9.2011	1.1.2014	31.8.2015
K	Euro 5b	Euro 5+	M <sub>1</sub> to fulfil specific social needs (excluding M <sub>1</sub> G)	CI	1.9.2011	1.1.2014	31.8.2015
L	Euro 5b	Euro 5+	N <sub>1</sub> class II	PI, CI	1.9.2011	1.1.2014	31.8.2016
M	Euro 5b	Euro 5+	N <sub>1</sub> class III, N <sub>2</sub>	PI, CI	1.9.2011	1.1.2014	31.8.2016
N	Euro 6a	Euro 6-	M, N <sub>1</sub> class I	CI			31.12.2012
O	Euro 6a	Euro 6-	N <sub>1</sub> class II	CI			31.12.2012
P	Euro 6a	Euro 6-	N <sub>1</sub> class III, N <sub>2</sub>	CI			31.12.2012
Q	Euro 6b	Euro 6-	M, N <sub>1</sub> class I	CI			31.12.2013
R	Euro 6b	Euro 6-	N <sub>1</sub> class II	CI			31.12.2013
S	Euro 6b	Euro 6-	N <sub>1</sub> class III, N <sub>2</sub>	CI			31.12.2013
T	Euro 6b	Euro 6-plus IUPR	M, N <sub>1</sub> class I	CI			31.8.2015
U	Euro 6b	Euro 6-plus IUPR	N <sub>1</sub> class II	CI			31.8.2016
V	Euro 6b	Euro 6-plus IUPR	N <sub>1</sub> class III, N <sub>2</sub>	CI			31.8.2016
W	Euro 6b	Euro 6	M, N <sub>1</sub> class I	PI, CI	1.9.2014	1.9.2015	54

Character	Emissions standard	OBO standard	Vehicle category and class	Engine	Implementation date: new types	Implementation date: new vehicles	Last date of registration
X	Euro 6b	Euro 6	N <sub>1</sub> class II	PI, CI	1.9.2015	1.9.2016	
Y	Euro 6b	Euro 6	N <sub>1</sub> class III, N <sub>2</sub>	PI, CI	1.9.2015	1.9.2016	

**Key:**

'Euro 5 a' emissions standard = excludes revised measurement procedure for particulates, particle number standard and flex fuel vehicle low temperature emission testing with biofuel.

'Euro 6a' emissions standard = excludes revised measurement procedure for particulates, particle number standard and flex fuel vehicle low temperature emission testing with biofuel.

'Euro 5+' OBO standards = includes relaxed in use performance ratio (IUPR), NO<sub>x</sub> monitoring for petrol vehicles and tightened PM threshold limits for diesel.

'Euro 6-' OBO standards = relaxed diesel OBO threshold limits, no in use performance ratio (IUPR).

'Euro 6- plus IUPR' OBO = includes relaxed diesel OBO threshold limits and relaxed in use performance ratio (IUPR)

*Note:* Article 4(7) only permits type-approvals according to characters W, X and Y to be performed once Euro 6 OBO thresholds have been introduced.

## 2. Examples of type-approval certification numbers.

2.1. An example is provided below of a first approval without any extensions of an Euro 5 light passenger vehicle. The approval was granted to the base regulation and its implementing regulation so the fourth component is 0001. The vehicle is of category M<sub>1</sub> represented by letter A. The approval was issued by the Netherlands:

e4\*715/2007\*692/2008A\*0001\*00

2.2 This second example shows a fourth approval for the second extension of an Euro 5 light passenger vehicle of category M<sub>1</sub>G meeting the special social needs requirements (letter C). The approval was granted to the base regulation and an amending regulation in the year 2009 and was issued by Germany:

e1\*715/2007\* ... /2009C\*0004\*02

### TAAM Minutes:

#### For Question 1) A

**The meeting agreed that Character F cannot be applied to approvals for Direct Injection Positive Ignition engines until the new measurement procedure is introduced.**

**It was therefore confirmed that Direct Injection Positive Ignition engines can currently only be approved according to the provisions associated with Characters A, D or E (according to EC Regulation 692/2008 Annex I Appendix 6 with reference to the vehicle category and class).**

**The EC has been requested to provide outcome on this issue as a priority matter.**

**Question 2) A**

The meeting noted that Regulation (EC) 715/2007 approvals for EC Small Series vehicles approved using the California Code (Reference EC Regulation 692/2008, Annex I Section 2) should be marked with the Character A.

Subject to future legislative provisions, these approvals can then be updated step by step according to the legislative timetable in EC Regulation 692/2008 Annex I Appendix 6. This approach will ensure that the approval level for these vehicles is not issued too far in advance and thereby avoid potential problems that could be caused by future legislative changes.



**5.21 2007/46/EC: Emissions for motor caravans**

**Legislation (directive/regulation/etc): 2007/46/CE ; 70/220\*2006/96/CE ; 715/2007\*692/2008/CE**

**Text:**

- **2007/46/CE** annex XI, appendix I, points 2: the motor caravans M1 category with technically permissible maximum laden mass more than 2500 kg must fulfil the provisions of directive 70/220/CE or of the regulation (EC) 715/2007, with the remarks G and Q.

G: Requirements according to the category of the base/incomplete vehicle (the chassis of which was used to build the special purpose vehicle). In the case of incomplete/completed vehicles, it is acceptable that the requirements for vehicles of the corresponding category N (based on max. mass) are satisfied.

Q: Modification of exhaust system length after the last silencer not exceeding 2 m is permissible without any further test. An EC type-approval issued to the most representative base vehicle remains valid irrespective of change in the reference weight.

- **70/220\*2006/96** has no limitation for the reference mass of M1 and N1 category.

**Fact:** We have received for national registration some motor caravans with the reference mass **over 3000 kg** built on the basis of a N1 vehicle. The emission certificate for the N1 base vehicle is issued according to the provisions of 70/220\*2003/76B for a range of vehicles with the reference mass from **1761 to 2840 kg**.

**Question:** is it possible to consider valid the emission certificate of the base vehicle for the motor caravan taking into account the last sentence of the Q remark?

Solution	accepted	refused
Yes		
No		

**TAAM Minutes:**

**The meeting agreed that, in the case of the example quoted in this question, an approval could be granted under provisions of “Q remark” (reference 2007/46/EC, Annex XI, Appendix I, item 2).**

**5.22 2007/46/EC, Annex IX: CoC - Coupling device**

**RELEVANT SECTION:**

Annex IX Vehicle categories O<sub>1</sub> and O<sub>2</sub> items 44 and 45

*Coupling device*

44. Approval number or approval mark of coupling device (if fitted): .....

45.1. Characteristics values ( 1 ): D: .../ V: .../ S: .../ U: ...

**QUESTION:**

How should the wording “*if fitted*” be interpreted? Does item 44 point to a coupling device that is fitted at the rear of the vehicle? A vehicle in category O<sub>1</sub> and O<sub>2</sub> is, for normal use, always equipped with a coupling device in the front and therefore the wording “if fitted” in item 44 could be read to point out an extra coupling device at the rear. This would mean that for a vehicle with just a normal coupling at the front no values should be filled in for these items.

<b>A</b>	Items 44 and 45.1 are intended for the normal coupling device at the front and the values must be filled in.	
<b>B</b>	Items 44 and 45.1 are intended for an extra coupling device at the rear and the values should not be filled in.	

**Type approving authority "e"**

Selection of solution		accepted	refused
	<b>A</b>		
	<b>B</b>		

**TAAM Minutes:**

**The TAAM delegates agreed with Solution A.**

**It was suggested that in the case of a “double bottom” trailer with front and rear couplings, the manufacturer should provide data for both couplings.**

**Whilst it was noted that “if fitted” might be relevant in the case of a multi-stage approval, the meeting requested the Commission to consider deletion of the words “if fitted” in future legislative revisions in order to avoid unnecessary confusion.**

**6. ITEMS RELATING TO FRAMEWORK DIRECTIVE 2002/24/EO (MOTOR CYCLES)**

**6.1 2002/24/EC, Annex II (Information Document), line 5.2., rims**

**Background**

- 5. Suspension
- 5.1. Drawing of suspension arrangement: .....
- 5.1.1. Brief description of the electrical and/or electronic components used in the suspension: .....
- 5.2. Tyres (category, dimensions and maximum loading) and rims (standard type): .....
- 5.2.1. Nominal rolling circumference: .....

**Major Concern**

Manufacturers of two or three-wheel motor vehicles often don't explain the complete rim - measurements. Often only the rim diameter is defined but not the rim width. For our periodical inspection system we need both indications width and diameter of the rim and if it possible, for all kinds of versions of rims for seen by the manufacturer.

**Questions**

1.) In our understanding, in position 5.2 the complete standard type rims (all versions for seen by the manufacturer) must be declared (for example 4.00-15 or 2.75x18) **Answer:**

- A) yes
- B) no

2.) Do you think that if the manufacturer gives no indications concerning the rim width, all approved rim widths according to the ETRTO are possible? **Answer:**

- A) yes
- B) no

**Comments**

**Authority**

TAA Code: „e”   
                  „E”

**TAAM Minutes:**

**Question 1**

The delegates agreed with Solution A (the complete standard type rims must be declared).

**Question 2**

Because of the positive answer to Question 1, Question 2 was no longer considered to be relevant.

## 6.2 2002/24/EC, Annex II and X: Coupling devices for motorcycles

### RELEVANT SECTION:

Annex I item 9.1 *Coupling devices (where applicable)*

Annex I item 2.5 *Maximum towable mass (where applicable)*

Annex I item 2.6 *Maximum mass of the combination*

### QUESTION:

How do the member states deal with two-wheeled motorcycles where the manufacturer has stated "not applicable" in above mentioned items?

<b>A</b>	The vehicle is <u>not constructed for towing</u> according to the manufacturer. It is not allowed to mount a coupling device	
<b>B</b>	The vehicle has no maximum towing weight determined. <u>A national maximum towing weight can be set</u> by the manufacturer of a towing device	
<b>C</b>	<u>The vehicle is covered by national criteria</u> for mounting coupling devices. If you chose this alternative, please exemplify	

**Type approving authority "e"**

Selection of solution		accepted	refused
	<b>A</b>		
	<b>B</b>		
	<b>C</b>		

### **TAAM Minutes:**

**The meeting supported solution A, on the basis that if a manufacturer does not provide maximum combination mass and maximum towable mass data, then it should be assumed that the vehicle is not designed for towing.**

**It was noted that there may be opportunities at national level for towing provision to be added by means of an individual vehicle approval.**

### 6.3 Reference to certain directives applying to 2/3 wheelers

#### REFERENCE TO CERTAIN DIRECTIVES:

- **Regulation number :**

All the separate directives applying to 2/3 wheelers and for example

- DIRECTIVE 97/24/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 June 1997 on certain components and characteristics of two or three-wheel motor vehicles

- **Text of Directive 97/24 chap.11,**

*Annex I*

#### 3. MINIMUM NUMBER OF BELT ANCHORAGES

3. 1. Two lower and one upper anchorage ... reference zone *defined in Annex II to Directive 74/ 60/ EEC*. ... with the method described in Annex II to Directive 74/ 60/ EEC on the interior fittings of motor vehicles (1).

( 1 )-7 OJ No L 38, 11. 2. 1974, p. 2.

*Annex VI*

1. The requirements for vehicles of category M 1 set out in the Annexes to Directive 77/541/ EEC (1) apply.

( 1 )-11 OJ No L 220, 29. 8. 1977, p. 95.

L vehicle category requirements refer to base separate directive. Those separate directive have been amended to adapt to technical progress. Some of the base directives are no longer valid because of all type date.

- **Issue**

In the case of such references to other directives, what requirements are in fact applicable for L vehicle approval?

#### Possibilities of solution

#### Comments

	A	The requirements are those of the base directive	
	B	The requirements are those of the based directive, amended by the latest directive applicable at the moment	
	C	Other solution	

Type approving authority « e »

<b>Selection of solutions</b>		Accepted	Refused
	A		X
	B	X	
	C		X

**TAAM Minutes:**

**The meeting agreed with Solution B.**

#### 6.4 97/24/EC as amended by 2006/120/EC: Exhaust system with flaps

Is it possible to approve a complete motor cycle replacement exhaust system that is totally different from the original exhaust system and replaces in only one section all parts after the cylinder head up to the silencer outlet (exhaust manifold, oxygen probes, flap control, catalyst, silencer), even if the requirements set out in Chapter 5 Annex VII Section 5.1.10 are not fulfilled?

The example (see pdf-picture as attached) of a series manufactured replacement exhaust system is given as follows:

- A. original equipped system
- B. modified illustration of the replacement system

Should these variations

a) not be approved

or

b) be approved if additional tests under equivalent conditions have been demonstrated (same temperatures at same places and identical loads). In addition flaps and flap controls deviating from the original equipment shall be assessed with regard to the original equipped system. Additional verification about the equivalence with the original flap control is required.

A Member State is of the opinion that flap controls in replacement exhaust systems shouldn't be type approved for vehicles having no flap controls in its original exhaust system.



Exhaustsystems.pdf

#### Prescription

97/24/ chapter 5 , 2006/120/EC

#### Possibilities of solution

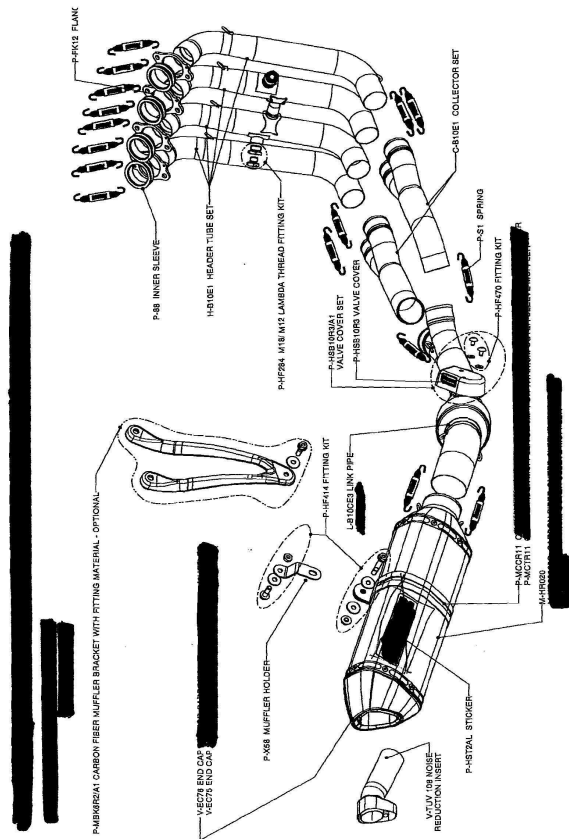
#### Comments

	Yes, it's possible to grant an approval	
<b>B</b>	An approval is only possible with the a.m. additional testing and provisions	.

**Type approving authority "e"**  

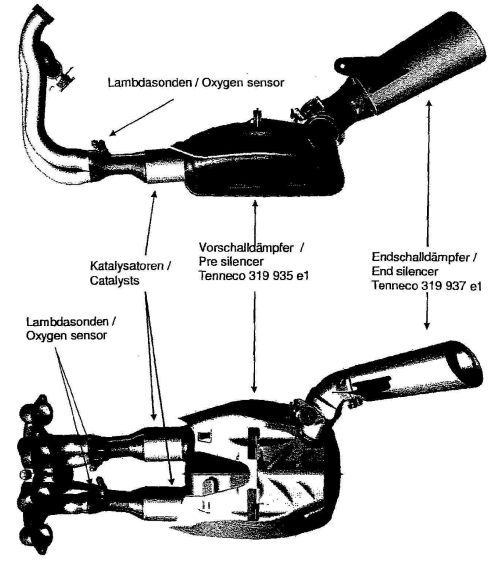
Selection of solution		accepted	refused
	<b>A</b>		
	<b>B</b>		





Schalldämpfer  
Exhaust system

Seite 1 von 1  
Sheet 1 of 1



**TAAM Minutes:**  
 It was clarified that, whilst one of the Member States is of the opinion that flap controls in replacement exhaust systems shouldn't be type approved for vehicles having no flap controls in its original exhaust system, this particular question referred to a replacement for an exhaust system that did include flaps in its original specification.  
  
 The meeting supported Solution B and it was noted that whilst the legislation requires oxygen probes and other sensors used for the replacement equipment to be in the same position as those used for original equipment, there might be some limited opportunity for flexibility on a strictly case by case basis.

## **7. ITEMS RELATING TO FRAMEWORK DIRECTIVE 2003/37/EO (AGRICULTURAL AND FORESTRY TRACTORS)**

### **7.1 2000/25/EC as amended by 2005/13/EC: Emissions for tractors**

#### **REQUIREMENTS FOR PETROL ENGINES**

#### **BACKGROUND**

Annex 1 of 2000/25/EC, as amended, states that a 'type of tractor engine in terms of pollutants emitted means a **compression-ignition engine**'.

The Preamble to 2000/25/EC, as amended by 2005/13/EC, refers to the need to take account of the provisions of the Non Road Mobile Machinery Directive (97/68/EC).

#### **DISCUSSION**

At first sight, it would seem that spark ignition engines are outside the scope of the legislation for agricultural tractors.

However, the Non Road Mobile Machinery Directive, 97/68/EC as amended by 2004/26/EC, does include provisions for petrol fuelled spark ignition engines with net power of not more than 19 kW.

Article 4 of 2000/25/EC, as amended by 2005/13/EC, lists the timetable for the implementation of Emissions Stages I to IV and this is linked to 97/68/EC in terms of the defined power ranges.

The link to 97/68/EC could, perhaps, be deemed to suggest that agricultural tractors with petrol fuelled spark ignition engines with net power of not more than 19 kW should meet the relevant provisions of 97/68/EC (as amended).

Also, in line with Item 4 of the 2005/13/EC Preamble, Annex III of 2005/13/EC amends the Tractor Framework Directive (2003/37/EC) to cover the option of spark ignition engines in I Annex I (Information Document Sections 3.1.6 and 3.1.7) and in Annex III (Certificate of Conformity Sections 3.1.6 and 3.1.7).

However, there is still no specific mention of spark ignition or petrol engines in the documentation needed for 2000/25/EC, as amended by 2005/13/EC.

#### **QUESTION**

What are the engine emissions requirements for petrol fuelled spark ignition engines fitted in agricultural tractors?

Possibilities of solution

Comments

<b>A</b>	<p>There are no EC Type Approval requirements for petrol fuelled spark ignition engines fitted in agricultural tractors</p>	<p>Petrol fuelled spark ignition engines are not covered by 2000/25/EC (as amended).</p>
<b>B</b>	<p>There are no EC Type Approval requirements for petrol fuelled spark ignition engines fitted in agricultural tractors with net power above 19 kW</p> <p>However, petrol fuelled spark ignition engines fitted in agricultural tractors with net power not exceeding 19kW must comply with the relevant provisions of 97/68/EC (as amended)</p>	<p>Petrol fuelled spark ignition engines are not covered by 2000/25/EC (as amended) but 97/68/EC (as amended) makes provision to cover those with net power not exceeding 19kW</p>

## LEGISLATION

### 2000/25/EC as amended by 2005/13/EC

#### *Preamble*

*(3) Annexes I and II to Directive 2000/25/EC need to be adapted, notably to take account of the introduction by Directive 97/68/EC as amended by Directive 2004/26/EC of new emission limits for combined emission of hydrocarbons and oxides of nitrogen. Other changes should be introduced in those annexes to ensure consistency between the provisions on information documents laid down in Directives 2000/25/EC, 97/68/EC and 2003/37/EC. In addition, Annex III to Directive 2000/25/EC needs to be adapted in order to add the alternative type-approvals to be recognised for the new stages III A, III B and IV.*

*(4) It is also necessary to adapt Annex I to Directive 2003/37/EC in order to ensure consistency between the provisions on information documents laid down in Directives 2000/25/EC, 97/68/EC and 2003/37/EC. In particular, discrepancies in terminology should be eliminated in the interests of clarity.*

*ANNEX I – Requirements for EC type-approval of a type of engine or engine family for a tractor as a separate technical unit in terms of the pollutants emitted*

#### 0. GENERAL

*Unless otherwise defined by this Directive, the appropriate definitions, symbols and abbreviations contained in Directive 97/68/EC are applicable.*

#### 1. DEFINITIONS

- *‘type of tractor engine in terms of pollutants emitted’ means **compression-ignition engines** which display no essential differences with regard to the characteristics defined in Appendix 1 to Annex I,*
- *‘pollutants emitted’ means gaseous pollutants (carbon monoxide, hydrocarbons, and nitrogen oxides) and polluting particulates.*

### 97/68/EC as amended by 2004/26/EC

#### *ANNEX I*

#### 1. SCOPE

*This Directive applies to all engines to be installed in non-road mobile machinery and to secondary engines fitted into vehicles intended for passenger or goods transport on the road[2002/88-34].*

*This Directive does not apply to engines for the propulsion of:*

- *vehicles as defined by Directive 70/156/EEC (1), and by Directive 92/61/EEC (2),*
- *agricultural tractors as defined by Directive 74/150/EEC (3).*

*Additionally, in order to be covered by this Directive, the engines have to be installed in machinery which meets the following specific requirements:*

- A. *intended and suited, to move, or to be moved with or without road, and with*
  - (i) *a C.I. engine having a net power in accordance with section 2.4 that is higher than or equal to 19 kW but not more than 560 kW and*

*that is operated under intermittent speed rather than a single constant speed;*

*or*

*(ii) a C.I. engine having a net power in accordance with section 2.4 that is higher than or equal to 19 kW but not more than 560 kW and that is operated under constant speed. Limits only apply from 31 December 2006;*

*or*

*(iii) a petrol fuelled S.I. engine having a net power in accordance with section 2.4 of not more than 19 kW;*

### **2003/37/EC - Regulation (EC) 1137/2008**

#### **Annex I**

#### **3. ENGINE**

##### **Part 1 — General**

**3.1. Parent engine/engine type (1) (3) (21)**

**3.1.1. Make(s) (trade name of manufacturer):**

**3.1.2. Type and commercial description of the parent and (if applicable) of the family of engine(s) (1):**

**3.1.3. Manufacturer's type coding as marked on the engine(s) and method of affixing;**

**3.1.3.1. Location, coding and method of affixing of the engine type identification number:**

**3.1.3.2. Location and method of affixing of the EC component type-approval mark:**

**3.1.4. Name and address of manufacturer:**

**3.1.5. Address(es) of assembly plant(s):**

**3.1.6. Operating principle:**

— **spark/compression ignition**

— **direct/indirect injection**

— **two-four-stroke**

**3.1.7. Fuel**

**Diesel/petrol/LPB/other**

#### **TAAM Minutes:**

**The meeting confirmed that Agricultural Tractors with spark ignition engines cannot be approved under the provisions of 2000/25/EC.**

**Some delegates also considered that, because petrol engined tractors would not be able to have a valid 2000/25/EC approval, it would simply not be possible to grant an EC Whole Vehicle Approval for these vehicles.**

**Some TAAM delegates supported Solution B following the rationale that if there are no requirements for petrol engines, at least the provisions of Directive 97/68/EC should be followed for tractors with engine power below 19 kW. In this case it is possible some national Whole Vehicle requirements to be applied.**

**Taking into account the broad discussion on this issue and lack of consensus between TAAM delegates, the meeting agreed to defer this question until the next TAAM considering the possibility to develop further the question.**

## 7.2 2008/2/EC: Field of vision for agricultural tractors

### VISIBILITY OF FRONT WHEELS

#### BACKGROUND

2008/2/EC (Annex I Section 2.1) states that the field of vision for an Agricultural tractor is considered adequate when the driver has, as far as possible, a view of part of each front wheel.

However, the words 'as far as possible' leave some scope for interpretation.

#### DISCUSSION

Considering the following three examples in turn:



#### **Example A**

Example A: The front wheels are clearly visible to the driver and this vehicle fully complies with the legislation.



### Example B

Example B: Parts of the front wheels also seem to be visible (and the front mudguards can also be used to identify the location of the wheels). This vehicle could also be considered to comply with the legislative requirements within the scope of the words ‘the driver has, **as far as possible, a view of part of each front wheel**’.



### Example C

Example C: In this case of the situation is not so clear:

Whilst the front wheels are not directly visible, it could be argued that, by reference to the position of the front wings and the steering wheel angle, the driver does have full awareness of the position of the front wheels.

Alternatively, it could be considered that, because there is no direct visibility of the front wheels, the vehicle would not comply unless the manufacturer redesigned the front section to remove the front wings and thereby provide the driver with a direct view of part of the front wheels.

### QUESTION

In the case of the vehicle shown in Example C, can the driver be considered to have, as far as possible, a view of part of each front wheel according to the provisions of Annex I Section 2.1?

### Possibilities of solution

### Comments

A	No,	The front wheels are covered by the front wings and are not directly visible
B	Yes	The driver can judge the position of the front wheels by reference to the position of the front wings

## LEGISLATION

2002/8/EC

### **ANNEX I - FIELD OF VISION DEFINITIONS AND REQUIREMENTS**

#### 1. DEFINITIONS

##### **1.1. FIELD OF VISION**

*'Field of vision' means all forward and lateral directions in which the driver of the tractor can see.*

#### 2. REQUIREMENTS

##### **2.1. GENERAL**

*The tractor shall be constructed and equipped in such a way that, in road traffic and in farm and forest use, the driver has an adequate field of vision, under all the usual conditions pertaining to highway use and to work undertaken in fields and forests. The field of vision is considered adequate when the driver has, as far as possible, a view of part of each front wheel and when the following requirements are fulfilled.*

.....

#### **TAAM Minutes:**

**There is no final decision, because the opinions of delegations were equally split between Solution A and Solution B and it was not possible to reach any consensus agreement. The TAAM delegates were requested to consider further the question in order to support discussions at the next TAAM.**



## 8. MISCELLANEOUS

### 8.1 Short report of the ETAES - Meeting

#### TAAM Minutes:

The Chair of ETAES (Mr. Frank Wrobel) outlined the main issues of the ETAES meeting held on 2 June 2010 in Sofia. The key points are as follows:

#### Operation of ETAES:

It was reported that ETAES is operating very well. Portugal and Hungary are the only Member States not yet included.

It was noted that, whilst Italy is a member of ETAES, it is still not fully active and it will be given further encouragement to fully participate.

Development of the ETAES III software is still progressing well and is planned for introduction by the end of 2010. It was explained that this new HTML based software is more sophisticated and will enable ETAES access from anywhere via the internet using a standard internet browser.

#### Financing

The invoicing system is now in operation and the TAAM delegates were thanked for their co-operation in arranging payment. Greece has still not agreed to the financial arrangements and will therefore be given only limited access to ETAES data.

#### DETA meeting

Work in relation to the UN ECE DETA group is ongoing and delegates from the DETA group have been given an opportunity to trial a version of the ETAES software to show how the system could work with UN ECE systems approvals.

#### XML Sub-Group

It was reported that a key activity of the XML subgroup is now the development of a master XML file that could be used to provide a common data file that can be used to provide information for several different vehicle registration and type approval applications (e.g. data for CoC, Annex III/Annex I, sound monitoring, CO2 monitoring, specific national requirements, etc.)

It was explained that a master file data list will initially be put on ETAES in an Excel file format and there will be a column allocated for each Member State alongside the data list. Delegates were requested to complete their designated column to identify the specific data that they would need and, when necessary, add any missing items to the data list. Each Member State would be allocated a specific colour code so that their requirements can be easily identified. The intention would then be to develop a consolidated master file that would include all necessary fields.

#### Elimination of the need for Paper Document Exchange

In order to eliminate the need for any further exchange of paper approvals, it was reported that a request will be sent to the Commission for a change to the wording of 2007/46/EC, Article 8, Section 5 as follows:

*“5. The approval authority shall, within 20 working days, send to the approval authorities of the other Member States a copy of the EC vehicle type-approval certificate, together with the attachments, for each type of vehicle which it has approved by means of a secured common electronic file exchange system. ~~The hard copy may be replaced by an electronic file.~~”.*

The Commission will also be requested to make exactly the same provisions in both the Motorcycle and Agricultural Tractor Whole Vehicle Framework legislation.

## **8.2 Short report of the Multi-Stage Subgroup**

### **TAAM Minutes:**

**The Chair of TAAM Multi-Stage Subgroup (Mr. Frank Wrobel) reminded the meeting that the purpose of this subgroup is to develop a set of guidelines in order to achieve a common approach for EC multi-stage approvals.**

**It was reported that good progress has already been achieved and the draft guidelines are under preparation. It was planned that there will be one further meeting (to be held in the UK in mid-September 2010) and it is intended that a final report will be available for presentation to the next TAAM in Romania. After finalization, the guideline shall be submitted to the European Commission.**

**The draft minutes of the last MSS meeting was distributed to TAAM delegates for information.**

### 8.3 2009/40/EC: OBD-equipped engines

<b>Directive or Regulation number:</b>	
Directive 2009/40/EC of the European Parliament and of the Council of 6 May 2009 on roadworthiness tests for motor vehicles and their trailers	
<b>Subject:</b>	
Failure codes P0xxx by emission check of OBD-equipped engines	
<b>Text:</b>	
<p>Annex II: Items to be compulsorily tested, paragraph 8.2.1. Motor vehicles equipped with positive-ignition engines and fuelled by petrol, b) 4. Exhaust pipe emissions - limit values, iii) For motor vehicles equipped with on-board diagnostic systems (OBD) in accordance with Directive 70/220/EEC Member States may as an alternative to the test specified in item (i) establish the correct functioning of the emission system through the appropriate reading of the OBD device and the simultaneous checking of the proper functioning of the OBD system.</p> <p>According to the test method applied in one Member State by periodical emission inspections for motor vehicles equipped with OBD if there was indicated any failure code including codes of type P0xxx, it is not allowed to carry out the emission check and the vehicle is assessed as incapable for the road traffic and therefore it should be (in accordance with national law) towed away into the repair shop. This verdict seems to be too hard in such cases. For example: To declare the vehicle as incapable for the road traffic by failure code P0463 “overloading of fuel tank” etc.</p>	
<b>Question:</b>	
Do other EU Member States act in this way, or are there any lists of exemptions with P0xxx codes, which would be assessed as non incapable at emission inspections?	
<b>Possibilities of solution:</b>	
<b>A</b>	<b>Yes</b> , we do not any exemptions and all indicated P0xxx codes are unallowable by emission inspections.
<b>B</b>	<b>No</b> , we have an exemption’s list of P0xxx codes which are allowed at emission inspections.
<b>Decision (accepted):</b>	
<b>Remark:</b>	
If there are available any lists of exemptions with P0xxx codes in Your Member State, please, attach the list to Your answer or add a web-link. Thanks.	
<b>Legislation:</b>	

Annex II par. 8.2.1. letter b) point 4 of the directive 2009/40/EC - Exhaust pipe emissions - limit values:

The maximum permissible CO content in the exhaust gases is that stated by the vehicle manufacturer. Where this information is not available the CO content must not exceed the following:

(i) Measurement at engine idling speed:

The maximum permissible CO content in the exhaust gases must not exceed 0,5 % vol. and for vehicles that have been type-approved according to the limit values shown in row A or row B of the table in point 5.3.1.4 of Annex I to Directive 70/220/EEC; the maximum CO content must not exceed 0,3 % vol. Where compliance with Directive 70/220/EEC is not possible then the above shall apply to vehicles registered or first put into service after 1 July 2002.

(ii) Measurement at high idle speed (no load), engine speed to be at least 2 000 min<sup>-1</sup> :

CO content: maximum 0,3 % vol. and for vehicles that have been type-approved according to the limit values shown in row A or row B of the table in point 5.3.1.4 of Annex I to Directive 70/220/EEC; the maximum CO content must not exceed 0,2 % vol. Where compliance with Directive 70/220/EEC is not possible then the above shall apply to vehicles registered or first put into service after 1 July 2002.

Lambda:  $1 \pm 0,03$  or in accordance with the manufacturer's specifications.

(iii) For motor vehicles equipped with on-board diagnostic systems (OBD) in accordance with Directive 70/220/EEC Member States may as an alternative to the test specified in item (i) establish the correct functioning of the emission system through the appropriate reading of the OBD device and the simultaneous checking of the proper functioning of the OBD system.

**TAAM Minutes:**

**Several Member States provided verbal responses as some support for Solution A was noted. The delegate from one Member State then requested the remaining delegates to respond to this question by e-mail.**

**The development on this issue should be reported at the next TAAM.**

## **8.4 Adoption of vehicles to use for disabled persons**

**SUBJECT: Adaption of vehicles to use for disabled persons**

**DIRECTIVE: Miscellaneous**

The approach on how to approve vehicles that are adapted, e.g. by using special seats (or other equipment besides the regulated wheel chair places) to be used by disabled persons is different in the member states. In most states a WVTA is compulsory, and there are also a few vehicle manufacturers that include adapted vehicles as variants in their WVTAs, but in some states even though a WVTA is compulsory there is a possibility to get exemptions for this type of adaption.

The authority of one of the Member States has been contacted by CAPI that is an international organization working for a mutual approach in the member states in matters concerning vehicles to be used by disabled persons. One of their goals is to make it possible to get type approvals for components to be used in M<sub>1</sub> vehicles for adaptation of the vehicle for disabled persons.

Our question is if we may send a query to the member states of the TAAM to find out

- 1) How this is regulated in your country and
- 2) If you have any interest in a possible mutual view on these questions

### **TAAM Minutes:**

**The TAAM delegates agreed that they would be willing to respond to a questionnaire.**

**The development on this issue should be reported at the next TAAM.**

## 8.5 ECE Regulation 43: The requirements for abrasion wheels

### USE OF WHEEL WITH HARDNESS OUTSIDE LIMITS

#### ISSUE

The requirements for abrasion wheels are detailed in Annex 3 clause 4.1.2 of ECE Regulation 43. The specification asks for the wheels to have a hardness of  $72\pm 5$  IRHD.

Suitable wheels were supplied by Taber Industries (USA) but they recently changed their design and they are no longer willing to supply wheels with within the required hardness range.

Taber Industries offer a 'new and improved' CS-10F wheel. This new wheel provides better repeatability & consistent results but it has a hardness of approximately 94 IRHD which means that its specification is not strictly in line with the requirements of ECE R43.

#### Note

It should be noted that footnote 3 to R43 Annex 3 Section 4.1.2 states that 'suitable abrasive wheels may be obtained from Teledyne Taber (USA)'

#### QUESTION

Is it acceptable to use the CS-10F abrasion wheel (with hardness of approximately 94 IRHD) for ECE R43 approvals?

#### Possibilities of solution

#### Comments

A	No, there are alternative suppliers available	TAAM members are kindly requested to supply contact details
B	Yes	There are no alternative suppliers and hence this is the only practical solution
C	No, not until R43 is amended	ECE R43 must be amended to allow a higher hardness range

## LEGISLATION

### ECE Regulation 43

#### *Annex 3*

#### 4. TEST OF RESISTANCE TO ABRASION

- 4.1.2. *Abrasive wheels<sup>3/</sup>, each 45 to 50 mm in diameter and 12.5 mm thick, composed of a special finely-screened abrasive embedded in a medium-hard rubber. The wheels shall have a hardness of  $72 \pm 5$  IRHD, as measured at four points equally spaced on the centreline of the abrading surface, the pressure being applied vertically along a diameter of the wheel and the readings being taken 10 seconds after full application of the pressure.*

*The abrasive wheels shall be prepared for use by very slow rotation against a sheet of flat glass to ensure that their surface is completely even.*

*<sup>3/</sup> Suitable abrasive wheels may be obtained from Teledyne Taber (USA)'*

#### **TAAM Minutes:**

**The delegates supported Solution B. It was noted that R43 (and GTR No 6) should be amended to reflect the current supply situation.**



## 8.6 ECE-R67.01 LPG Equipment - (continuation of Brdo question 8.6)

### Directive or Regulation number:

ECE-R67.01 LPG Equipment

### Subject:

The filling unit

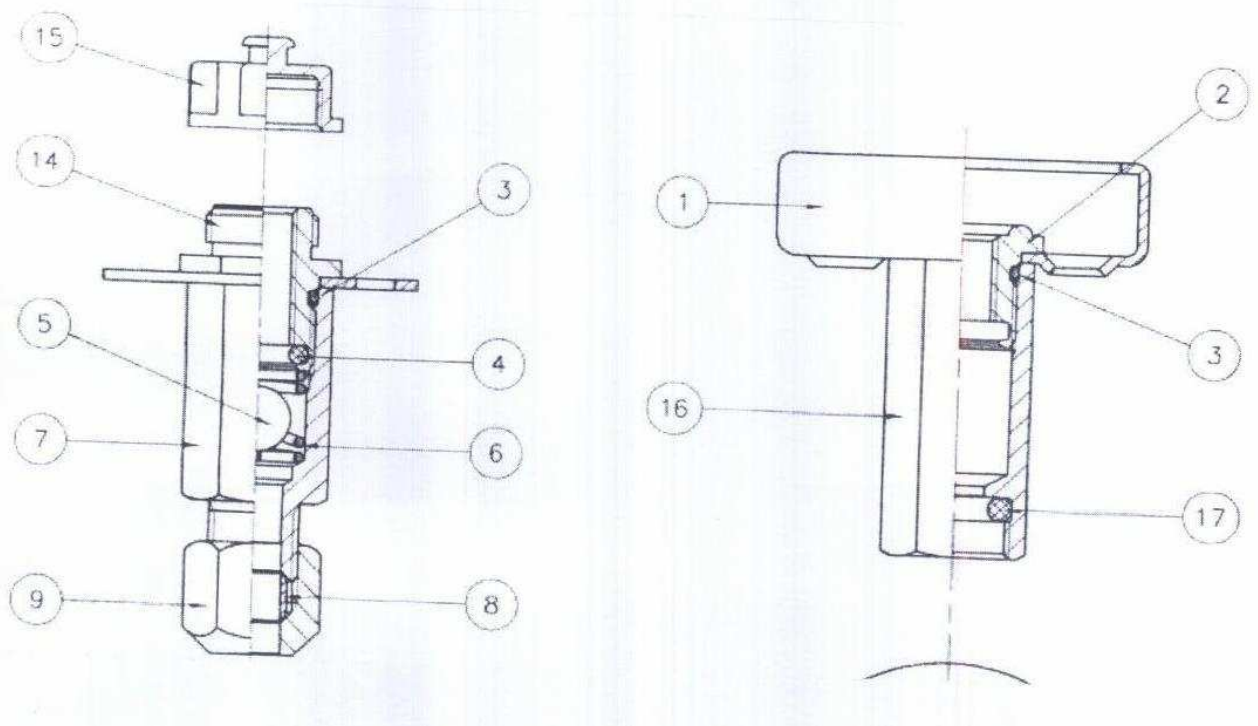
### Reference to Annex, etc in the Directive or Regulation:

6.15.10. Provisions regarding the filling unit

### Text:

6.15.10.1. The filling unit shall be equipped with at least one soft-seated non-return valve, and it shall not be dismountable by design.

**16.15.10.3. The design and dimensions of the connecting area of the filling unit must comply with those in the figures in Annex 9.**



According to the above mentioned drawing, this filling unit consists of two parts: the **left** part, which includes the soft-seated non-return valve and is fixed to the vehicle, and the **right** part, which is removable. The two parts are screwed together without any locking security.

### Question:

Is it correct to approve the above mentioned filling unit?

**Solutions:**

A	Yes	<b>The connecting area is no part of the filling unit and</b> the filling unit is not dismountable by design
B	No	The <b>connecting area is part of the filling unit</b> filling unit is dismountable by design (screwed connection)

**Decision:**

<i>Solution</i>	<i>Accepted</i>	<i>Refused</i>
A		<b>X</b>
B	<b>X</b>	

Authority:

Type approval Authority e/E

**Remarks:****TAAM Minutes:**

**This question was a continuation of Brdo question 8.6 discussions. With regard to this, the additional explanation was provided clarifying further the opinion of one of the Member States that the component in question was a filling unit and not a separate adaptor.**

**On this basis, the meeting supported Solution B.**

**8.7 UNECE-Regulation 79 - Steering equipment – steer by wire – joystick  
(continuation of Brdo question 8.8)**

**Issue (TAAM Slovenia point 8.8)**

**Meeting Minutes:**

A Member State delegate explained that, under the provisions of ECE R79.01, it is now possible to approve vehicles with steer by wire systems and that these systems are not specifically required to have steering wheels, i.e. the vehicle could be steered by means of a joystick device. The delegates were requested to consider the implications in order to support further discussion of this item at the next TAAM.

With SUPPLEMENT 3 TO THE 01 SERIES OF AMENDMENTS TO REGULATION No. 79 the possibility for steer by wire systems was implemented in the regulation. Furthermore there are no provisions for the necessity of a steering wheel in the regulation. From our point of view it could be possible, to fulfil all technical requirements of the regulation with a joystick steering system.

But the technical requirements and the acceptance of an approval according to UNECE-R 79 is only one point of this query.

Another point (perhaps the main point) is the question, if the national requirements for the driving licenses require the presence of a steering wheel, and if the driver needs an additional education during the driving school in your country (e. g. some Member States distinguish if the car in the driving school has a manual or automatic gear and limit the driving licence to that kind of gear).

Furthermore it's important to mention, that this joystick steering approval should be used for a "normal" vehicle and driver (general public) and not only for disabled people.

**Prescription**  
UNECE-Regulation 79

**Possibilities of solution**

**Comments**

	Yes, it's possible to grant an approval according to UNECE-R 79 for a joystick steering system.	
<b>B</b>	No, it's not possible to grant an approval according to UNECE-R 79	.
<b>C</b>	Yes, our national driving licence is also valid for a vehicle with a joystick steering	
<b>D</b>	No, our national driving licence is not valid for a vehicle with joystick steering.	
<b>E</b>	Other problems: e.g. vehicles for disabled people are out of scope although they are prepared to be driven by 'non-disabled people'	

**Type approving authority "e"**

Selection of solution		accepted	refused
	<b>A</b>		
	<b>B</b>		
	<b>C</b>		
	<b>D</b>		

**TAAM Minutes:**

**The meeting accepted that R79 does not forbid the use of joysticks. The Commission explained that this was intended to specifically make provision for vehicles designed for disabled drivers.**

**The view of the meeting was that it would not be possible to refuse to grant an EC whole vehicle approval for a vehicle holding an ECE Regulation 79 approval for a joystick steering control.**

**The meeting noted that, even if a vehicle is approved with a joystick steering control, there may be practical problems regarding the use of these vehicles because of national driving licence restrictions. In this regard the TAAM delegates agreed on the necessity the respective EC services to address further the issue.**

### 8.8 Camera-Monitor-Systems (CMS) (R46)

- Support of the possibility to start the development of an ISO Standard for specific provisions for automotive camera monitor systems

#### Issue

During the last meetings of the GRSG and under the chairmanship of the NL subgroup for CMS the wish of a general support by the member states to develop a new ISO standard was tabled. Please find attached a document that explains the situation.

A Member State would like to propose to support a new ISO CMS Development. Perhaps Mr. Jongenelen as the chair of the sub-group may carry the result to GRSG.

#### Prescription

[Attachment: ISO CMS.pdf](#)

#### Possibilities of solution

#### Comments

	A new ISO Standard for CMS is necessary and will help to test the CMS in vehicle in an adequate manner	
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**Type approving authority "e"**  

Selection of solution		accepted	refused
	<b>A</b>	<b>X</b>	

**UNECE/TRANS/WP.29/GRSG – IGCMS**

Propoal-Editor: Stephan Scheuer (TUV Rheinland)

**Annex**

**ISO - NEW WORK ITEM PROPOSAL**

**Proposer:** UN/ECE/TRANS/WP.29/GRSG - IGCMS

**a) Title**

**Road vehicles - Ergonomic and performance aspects of Camera-Monitor Systems - Requirements and test procedures**

**Introduction**

This International Standard considers Camera-Monitor Systems (CMS) as used in road vehicles to present the required outside information of a specific field of view in-vehicle.

A CMS consists of a camera, a monitor and accompanying components to provide a visual image of the scene captured by the camera in real-time on the monitor.

Depending on the mounting of the camera a CMS is able to provide different views to the driver.

**b) Scope**

This International Standard gives minimum ergonomic & performance requirements for Camera-Monitor Systems as used in road vehicles. It addresses Camera-Monitor Systems (CMS) that will be used in road vehicles to present the required outside information of a specific field of view in-vehicle. These specifications are intended to be independent of camera and display technologies.

**Normative references:** ISO 15008, ....

**Terms and definitions:** open **Guiding**

**principles:** open

**Ergonomic requirements and recommendations (Items to be addressed):**

- CMS – Applications (Use Cases, especially “Use Classes I to IV and VII as defined in UNECE regulation 46/02” and split screen use cases)
- Viewing conditions like viewing distance, viewing direction, viewing area and mirror class related to the display monitor
- Illuminance conditions (in vehicle, outside vehicle, night, day)
- Task requirements for the different use cases (mirror classes)
- Special physical requirements (Vibration, Wind, rain, snow, ice, excessive temperatures...) and coatings for protection against rain, snow and dirt, sensitivity of the system for rain,
- Performance requirements on detection and identification of the critical object as

well as readability and/or legibility if required (representative and critical object(s) specifications):

- Implications for the size of the critical object related to the display and viewing conditions like geometric proportions between the size of the real critical object and the size of the displayed critical object
- CMS-Performance requirements under different lighting conditions:  
Display luminance and luminance contrast of the monitor under different illumination conditions, night sight (minimum illumination level), adaptation of the light intensity during the night, Colour presentation and colour uniformity
- Image artefacts (blooming, smear, lens reflection, geometric distortion) and freezing risk due to processing of image information
- image interpretation,  
Camera and display defects (Sensor pixel and display pixel defects)
- Temporal fidelity (flicker)
- Spatial instability (jitter)
- Detection of motion in real time, image moving artefacts, motion blur
- Latency (delay of time until image is displayed)
- Image compression
- failure of the system
- wireless technology issues (image artefacts during image processing,...)

#### **Compliance assessment**

- Measurement & laboratory environment
- Measurement equipment and set-up
- Assessment and compliance procedures for different CMS applications
- Measurement Uncertainties

#### **Bibliography: open**

#### **c) Envisaged publication type: ISO (alternatively TR or PAS)**

#### **d) Purpose and justification**

1) Specific aims, reasons for standardization: Directive 2003/97/EC and ECE regulation 46.02 require the standardisation and extension of minimum ergonomic & performance requirements for camera-monitor systems as well as assessment and measurements methods for the compliance with the intended application(s).

2) Main interest groups; automotive industry, consumers and users which drive a vehicle and other road users, governments

3) Timeliness: 2 years

**e) Relevant documents:** UN/ECE regulation 46 Rev2, Directive 2003/97/EC, IGCMS working papers, <http://www.unece.org/trans/main/wp29/wp29wgs/wp29grsg/grsgage.html>

**e) Cooperation and liaisons:**

UN/ECE/TRANS/WP.29/GRSG-IGCMS (=INFORMAL GROUP ON CAMERA MONITOR SYSTEMS),

<http://www.unece.org/trans/main/wp29/wp29wgs/wp29grsg/grsgage.html>

**TAAM Minutes:**

**The meeting was in favour of supporting development of a new ISO standard but it was noted that it would first be necessary for a New ISO Working item to be agreed.**

**The TAAM delegates were therefore encouraged to request their respective National Standardisation Bodies to support a vote for a new working item (ISO CMS Development) to cover this topic.**



## **8.9 EC Small - Series Vehicles – verbal question**

The question concerns the upgrading of EC small series to WVTA.

### **Issue**

**A Member State delegate outlined a situation in which a vehicle that had already been granted EC Small Series is then submitted for an upgrade to full EC Whole Vehicle approval.**

### **Question**

Can this vehicle be considered to be an existing type for the purposes of full EC Whole Vehicle approval or would it be considered to be a new type?

### **TAAM Minutes:**

**The meeting expressed some concern that the situation described in the question might be used to bypass the implementation dates for some of the legislative requirements that are required for full EC Whole Vehicle approval but which are not needed for EC Small Series approval.**

**The meeting agreed that more time was needed to give due consideration to the full implications of this question and one Member State will therefore resubmit the question as a formal agenda paper for the next TAAM.**

## 9. FUTURE MEETINGS

### 9.1 2010 Q3/Q4: Romania

#### TAAM Minutes:

It was confirmed that the next TAAM will be held in Romania on 23 and 24 September 2010 (Sibiu).

### 9.2. 2011 Q1/Q2: to be discussed

#### TAAM Minutes:

As there are still no definite volunteers for the meetings to be held in 2011, the TAAM delegates were requested to consider possibilities for hosting the future meetings and especially the meeting envisaged for Q1/Q2 2011.

In order to support the decision-making process for volunteering meeting organisation in 2011, a table with TAAMs hosting MS was presented.

#### Meetings of TAAM

9-11 July 1997	Spain (Madrid)
11-12 December 1997	France (Paris)
8-10 June 1998	Germany (Flensburg)
19-21 January 1999	Luxemburg (Sandweiler)
8-10 June 1999	Sweden (Borlänge)
18-20 January 2000	United Kingdom (Bristol)
13-14 December 2000	The Netherlands (Delft)
6-7 June 2001	Norway (Sandvika)
21-22 November 2001	European Commission (Brussels)
4-5 June 2002	Finland (Tuusula)
16-17 December 2002	Belgium (Brussels)
9-10 July 2003	Germany (Flensburg)
4-5 February 2004	United Kingdom (Bristol)
21-22 September 2004	France (Paris)
9-10 March 2005	Spain (Madrid)
27-28 September 2005	Sweden (Borlänge)
5-6 April 2006	Ireland (Dublin)
28-29 September 2006	Austria and Hungary (Vienna)
22-23 March 2007	The Netherlands (Zoetermeer)
27 – 28 September 2007	Estonia (Tallinn)
9 – 10 April 2008	Germany (Leipzig)
9 – 10 October 2008	United Kingdom (Edinburgh)
26 – 27 March 2009	Switzerland (Bern)
8 – 9 October 2009	Slovenia (Brdo pri Kranju)
3 – 4 June 2010	Bulgaria (Sofia)
23 – 24 September 2010	Romania (Sibiu)

## **CLOSING OF THE MEETING**

### **TAAM Minutes:**

**The TAAM delegates were addressed with closing remarks by Mr Georgi Georgiev (Executive Director of Technical Control Inspectorate).**