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DRAFT AGENDA 39TH TCMV MEETING



EUROPEAN COMMISSION ENTERPRISE AND INDUSTRY DIRECTORATE-GENERAL

Sustainable growth and EU 2020 Sustainable mobility and automotive industry TECHNICAL COMMITTEE – MOTOR VEHICLES (TCMV)

> Brussels, 20 March 2014 ENTR/B4 – CM -

## Draft Agenda of the 39<sup>th</sup> meeting of the 'Technical Committee - Motor vehicles' (TCMV) Brussels, 01 April 2014

Place: Centre Albert Borschette, room AB4C 1040 Brussels, 10.00h – 13.00h

Documents can be downloaded from the CIRCABC group "Automotive Industry Committees and Working Groups":

https://circabc.europa.eu/w/browse/1af723ce-8472-47f8-bc67-9ab4269bb8c4

- 1. Approval of the draft agenda;
- 2. Updating of the TCMV members' list;
- 3. Approval of the draft minutes from the 38<sup>th</sup> meeting held on the 11 February 2014;
- 4. Implementation of Directive 2006/40/EC on Mobile Air-conditioning (MAC);
- 5. Information by the Commission : state of play and next steps on the 'Real Driving Emissions' project;
- 6. Exchange of views on a draft proposal for type-approval of innovative technologies for reducing CO2 emissions from light commercial vehicles;
- Consideration and delivery of opinion on a Commission Regulation amending Annexes I, III, VI, IX and XVII to Directive 2007/46/EC of the European Parliament and of the Council establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles (multi stage procedure);
- 8. Exchange of views on the draft proposal for the Commission Implementing Regulation (EU) [XXX] with regard to the administrative requirements for the approval of two- or three-wheel vehicles and quadricycles pursuant to Regulation (EU) 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles.

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Ordner 34 von 60

Minutes 39<sup>TH</sup> TCMV MEETING



EUROPEAN COMMISSION ENTERPRISE AND INDUSTRY DIRECTORATE-GENERAL

Sustainable Growth and EU 2020 Sustainable Mobility and Automotive Industry THE TECHNICAL COMMITTEE - MOTOR VEHICLES (TCMV)

> Brussels, 2 June 2014 ENTR/B/4 –

## MINUTES OF THE 39TH MEETING OF THE 'TECHNICAL COMMITTEE - MOTOR VEHICLES' (TCMV) MEETING

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HELD IN BRUSSELS ON 01 April 2014

European Commission - B-1049 Brussels - Belgium - Office: BREY 10/006. Telephone: direct line (32-2) Fax: (32-2)

1. Approval of the draft agenda;

Approved.

2. Updating of the TCMV members' list;

The participants were requested to send any changes to the secretariat.

3. Approval of the draft minutes from the 38th meeting held on the 11 February 2014;

The minutes were approved with no changes.

4. Implementation of Directive 2006/40/EC on Mobile Air-conditioning (MAC);

The Chair introduced the point on the application of Directive 2006/40/EC on mobile air conditioning (MAC) explaining that the Commission will present the state of play regarding the safety aspects of the use of specific refrigerants in MAC systems, most notably in what regards the review by the Joint Research Centre. Thanking the JRC for the excellent work, the Chair invited the Member States to provide their views on the issue.

The Commission representative informed that on 7 March 2014 the European Commission has published the scientific review, by the Joint Research Centre (JRC), of the research regarding the safety aspects of the use of refrigerant R1234yf on MAC systems. As it is known, this refrigerant was chosen in 2009 by the automotive industry to comply with the MAC Directive. The Directive does not require any specific refrigerant or technical solution for compliance with its requirements.

Given the concerns about the safety of the use of this refrigerant in MAC systems, the German authority in charge of market surveillance, the KBA (Kraftfahrt Bundesamt) decided to proceed with its own testing. The KBA published its final report in the end of October 2014. The tests described in this final report have been the basis of the work of the JRC.

In its report the KBA concluded that there was no sufficient supporting evidence of a serious risk in the use of the refrigerant that should entail the intervention of the authorities (Level 1 and 2 of the procedures: crash test and refrigerant release test). The report also considered that specific tests on refrigerant release under more extreme conditions (Level 3 of the procedures) had indicated instances of flammability and hydrogen fluoride exposure, that the KBA considered deserved further analysis.

In the TCMV meeting of 6 September 2013 the Commission proposed to the Members that the Joint Research Centre (JRC) reviews the KBA testing procedures, considering also the risk assessment performed by other research entities, manufacturers and associations, including the risk assessment and the fault-tree analysis provided by SAE.

The JRC performed the review accordingly to the mandate, in an open and transparent way, involving all stakeholders. The process followed involved the analysis of the report by KBA but also of other tests and analysis related to the use of the refrigerant. The Commission also organised three stakeholders meetings, open to all companies and authorities that showed interest on the subject, further to an open call for participation, on 20 November and 11 December 2013, and on 24 January 2014. In this last meeting the interim report drafted by the JRC in December was discussed.

All documents presented and debated in these meetings are available in the Commission dedicated webpage.

Following this consultation process, the JRC completed the final report, which was published on 7 March 2014, following written comments by the KBA.

The JRC's main conclusions have been made publically available at that date and distributed to the Member States in Circa. In very synthetic terms, they have confirmed that the testing procedures by the KBA were correct in their methodology and assumptions. There was no existing testing procedure available and the KBA developed an adequate process with this objective. Given that the main element of preoccupation was the ignition of the refrigerant, the KBA applied extreme but justifiable scenarios for testing in what regards temperatures to be reached by tested vehicles.

Regarding the Level 1 and Level 2 tests, the KBA concluded that "results do not provide sufficient supporting evidence of a serious risk within the meaning of the (German) Product Safety with the vehicle types tested hereto warrant the taking of any immediate measures by the KBA pursuant to that Act".

The JRC's final report underlined that these tests showed no ignition of refrigerants and very low hydrogen fluoride (HF) release despite the very high temperatures in the engine compartment. Consequently the results as such with the vehicles tested under the conditions as described provided no evidence of a serious risk.

Therefore, the JRC supported and reinforced the evaluation of the KBA that there were no grounds for the authorities to take measures under the European general product safety legislation. Therefore, according to this legislation, the products tested must be considered safe products.

Finally, regarding the refrigerant release tests under Level 3, these were not taken into account by KBA as relevant input "for the assessment of a possible risk within the scope of the statutory tasks as product safety authority". The JRC supported this approach.

One driving force behind the tests carried out under Level 3 was exploring what could happen under assumed extreme conditions not yet covered in Level 1 and Level 2 testing. For the JRC, the research character was also confirmed by going beyond the boundaries and limitations set for Level 1 and Level 2 tests, to verify if the worst case was chosen in the test setup, and considering in Level 3 also the "development of engines which can be expected for the future".

Whilst Level 1 and Level 2 tests were realistic and were considered by KBA for the conclusions on risks with respect to the product safety regulations, the Level 3 tests could not be associated with the necessary concrete probability of occurrence, but serve for a general appraisal of the risk. Compared to the scenarios for the realistic Level 1 and Level 2 testing, the probability of Level 3 scenarios must be assumed to be far lower, and not reflecting "normal or reasonably foreseeable conditions of use" under which the General Product Safety Directive 2001/95/EC applies.

In short, the conclusion of the JRC review was that, according to the existing legal framework on the general safety of products, there is no evidence of a serious risk in the use of this refrigerant on MAC systems under normal and foreseeable conditions of use.

Therefore, the review reinforces the conclusions by the German market surveillance authorities, which have considered that there is "no sufficient supporting evidence of a serious risk that would entail the intervention of the authorities". The Commission representative concluded thanking the KBA for the constructive contribution, in full transparency, to the work.

The Chair invited the Member States to present their comments to this work, thanking the KBA for the high quality of its technical work.

The representative of Germany opened his statement thanking the Commission services for the organisation of the working group experts meetings and for the preparation of the final report by the JRC. These activities have showed that the European Commission takes the safety concerns raised about the new refrigerant R1234yf seriously.

However, the mandate given to the JRC has been, for Germany, too limited because JRC has only been charged with the review of the limited testing performed by KBA. The fact that the review by the JRC did not go beyond the simple examination of the KBA data and tests was criticised early by Germany as not effective and insufficient. Germany repeatedly informed the Commission in writing about this assessment. From the perspective of Germany, an extended risk assessment would be required, based on all present experiments' results and findings and not just based on the limited tests of the KBA, which only had the objective to clarify whether, from a product safety perspective, the use of the new refrigerant in vehicles should be prohibited and measures should be taken. The KBA considered that these measures were not necessary. But that does not change the fact that there seems to exist an increased risk in vehicles using refrigerant R1234yf, and that the knowledge base regarding the open questions and safety concerns linked to the use of R1234yf needs to be improved in order to provide a basis for the necessary decisions.

After all, according to level 3 testing described in the KBA report, in specific situations the use of the new refrigerant can lead to vehicle fires and the emission of hydrofluoric acid in some specific conditions. While one may conclude that these cases are rarely occurring events, on the other hand, it is still not known under what specific technical conditions in the motor vehicle the ignition is likely. But several experiments demonstrated that it's possible.

For this reason, the German representative stated that it is not understandable that the JRC has denied in its final report a general safety problem in the use of the refrigerant R1234yf in mobile air conditioning systems. He reiterates that a more extensive study is needed, as requested by the KBA. The KBA submitted comments to JRC's interim report and a detailed list of the open safety issues; this document is publically available. Germany would have appreciated if the Commission would have paid more attention in these matters and explanations.

The representative of Italy thanked the Commission for the information and for the review and Germany for the information provided. He requested a clarification if the national authorities should authorise these vehicles on the market or wait for further testing procedures. He recalled that in 2017 all new vehicles will need to use the new gas and referred that Italy seeks to be informed that the Directive will then be properly implemented.

The representative from Germany replied explaining that, according to current knowledge, it can be said that if a manufacturer tests its vehicles it has to ensure that the refrigerant is used in a safe way. The tests already performed have proved that the refrigerant can be used safely. But there are safety concerns in the market, namely one manufacturer has declared that it cannot use the refrigerant safely in its vehicles. Therefore the authorities cannot force

that manufacturer to use the refrigerant in this situation. Germany is aware that the Directive does not prescribe a specific refrigerant, but the only available technical solution is, currently, R1234yf. CO2 may be used as an alternative refrigerant from 2016. Therefore, in this situation Germany suggests that the Commission seriously considers changing some elements of the type-approval process, at least making the existing standard ISO 13043 compulsory in the EU.

The Chair recalled the Members that the mandate of the JRC should necessary be limited, given that the capacity and responsibility for product testing is of the remit of national authorities, not the Commission. In this exceptional case, the Commission agreed to analyse the testing procedures that had been performed by different stakeholders, but at no time was there an intention to replace the national authorities in their responsibilities. The Commission cannot go beyond the work already performed by the JRC.

As for the safety issue, the Chair concluded reiterating that the Commission has considered that there is no sufficient supporting evidence of a serious risk of the use of refrigerant R1234yf in vehicles that would entail the intervention of the authorities. As has been the case with other flammable fluids and materials used in vehicles, the Commission considers that the existing legislation provides for a clear obligation of the manufacturers to put safe products on the market.

There are currently standards on the use of different refrigerants in MAC systems, including R1234yf, R744/CO2 and other alternative refrigerants (ISO 13043<sup>1</sup>, SAE J639<sup>2</sup>). There is no evidence that the respect of these and due diligence by the manufacturers are not sufficient to ensure the safety of the vehicles on the market.

In addition, there is no evidence that further regulation would change this situation. The Commission considers that it is not the existence of regulation that ensures that products are safe, but the referred due diligence of manufactures and the authorities.

The Chair also recalled that currently there are no dedicated EU (or international) Regulations regarding the safe use, in vehicles, of the flammable fluids used under the hood of a car (for illustration): combustibles (gasoline or dissel), brake fluids, engine oil, gear box oil and steering assistance oil. Even the windscreen washing fluids are registered as Class A flammable substances. Furthermore, batteries can ignite, and burning plastics (and other materials) also release HF. None of these fluids or materials has been regulated for use in vehicles.

The manufacturers have the responsibility to manage the risk that the use of these substances entails. The Commission cannot understand why refrigerant R1234yf should be treated differently.

The fact that some hundreds of thousands of vehicles using R1234yf (around 40 models are reported in Germany) are currently circulating in the European roads and this has not raised safety concerns among national authorities seems to confirm this assessment. This also seems to confirm that R1234yf can be safely used on motor vehicles if properly designed for this purpose.

In fact, the legislator has considered the need for manufacturers to technically adapt their vehicles to the new requirements, providing for a gradual entry into force of the Directive in three phases over 11 years – a particularly long phase-in period, which was endorsed by the industry. However, the legislator also determined that each of these phases should have a concrete effect regarding the ultimate objective of reducing emissions impacting on climate change.

In this context, the European Commission remains convinced that it is not acceptable to allow for a precedent that gives one private company the right to suspend the application of EU law, notably on the grounds of internal testing procedures that point to safety problems of its products, unconfirmed by the relevant authorities. This would not ensure neither the equal treatment of the economic operators nor the predictability of the regulatory framework that the industry, rightly, demands from the public authorities.

Considering these elements, the Commission does not intend, at this stage, to submit a regulatory initiative regarding the safety of MAC systems or the use of relevant refrigerants in MAC systems, considering the standardisation processes already concluded sufficient for the purpose of safety of the vehicles in the EU market.

The Chair concluded recalling that 1 January 2017 was the date for the entry into force of the  $3^{rd}$  phase of the MAC Directive, and from that date on all new vehicles will need to comply and the national authorities will need to take the adequate measures if this is not the case.

5. Information by the Commission: state of play and next steps on the 'Real Driving Emissions' project;

The representative of DG ENTR presented a state of play and next steps envisaged in the real driving emissions (RDE) project. The currently on-going work on a drafting of testing procedure and data evaluation method will continue as planned. Further discussions in the MVEG and TCMV will take place. A first draft would be submitted for exchange of views at the next TCMV.

IT thanked the Commission for reporting on the state of play and inquired about the possible future applications of the RDE testing procedure. The representative of DG ENTR explained the procedure should be applied to all pollutants if a justified reason (significantly higher emissions in real life than under regulatory test cycle) appears.

DE thanked the Commission for an update and expressed their support for the project.

#### Exchange of views on a draft proposal for type-approval of innovative technologies for reducing CO2 emissions from light commercial vehicles;

The representative of DGENTR presents the draft proposal of Commission Regulation concerning innovative technologies for reducing CO2 emissions from light commercial vehicles. The proposal is in almost all aspects identical to Regulation 195/2013 with respect to passenger cars. Two main aspects are highlighted:

- The proposed date of application would be 1 July 2015.

- Two certificates of conformity (CoC) need to be adapted, namely the one corresponding to N1 complete and completed vehicles, and the one corresponding to N1 incomplete vehicles.

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 <sup>&</sup>lt;sup>1</sup> ISO 13043:2011- Road vehicles -- Refrigerant systems used in mobile air conditioning systems (MAC) -- Safety requirements. ISO 13043:2011 addresses the use of only R - 134a, R - 1234yf and R - 744 refrigerants in vehicle original equipment manufacturer (OEM) and aftermarket (non-OEM) supplied components and systems.
 <sup>2</sup> SAE J 639-2011 (SAE J639-2011) - Safety Standards for Motor Vehicle Refrigerant Vapor Compression Systems

UK proposes that the date of application of the text is 1 September 2015, in line with the proposal on multi-stage vehicles. It is proposed that OEM's may apply the required changes before that date on a voluntary basis. The proposal is supported by The Netherlands and Romania.

It is concluded that DGENTR will check whether the coexistence of two different formats of CoC is possible, and if so, it might be the approach to be followed.

Consideration and delivery of opinion on a Commission Regulation amending Annexes
I, III, VI, IX and XVII to Directive 2007/46/EC of the European Parliament and of the
Council establishing a framework for the approval of motor vehicles and their trailers,
and of systems, components and separate technical units intended for such vehicles
(multi stage procedure);

The **Commission Representative** informed TCMV that the special MVWG group on the multi stage procedure had finalized its work. He recalled the main objectives of this proposal (implement and simplify the multi-stage procedure). He informed the group that the text was still under the internal inter-service consultation process until 7 April 2014 and that therefore the text would not be submitted to the opinion of the TCMV at this meeting, but at a later stage. The text was supported in general by the group. However, a number of Member States (UK, IT, RO) asked for clarifications on several issues (end of series, components, impact of the new vehicle noise Regulation on special purpose vehicles).

Madam Chair concluded that a revised version of the text will be prepared after the interservice consultation in order to be submitted to TCMV for vote at the earliest opportunity (next TCMV meeting or if the meeting is too late, through written procedure subject to Member States agreement).

8. Exchange of views on the draft proposal for the Commission Implementing Regulation (EU) [XXX] with regard to the administrative requirements for the approval of two- or three-wheel vehicles and quadricycles pursuant to Regulation (EU) 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles

Madam Chair introduced the item and stated that this exchange of views was important to understand if the MS would be willing to vote on the basis of this latest revision of the draft proposal.

The EC representative provided the status on the implementing act and its adoption process. The delegated acts 3/2014 (RVFSR), 44/2014 (RVCR) and 134/2014 (REPPR) supplementing Regulation (EU) No 168/2013 with test procedures and technical measures were all adopted in 2013 and subsequently published in January and February of 2014, all according to plan. In the meantime these 3 acts have entered into force. He stated that this draft implementing act, referred to as RAR, proved to be one of the more challenging proposals to finalise the package. It is highly complex as it refers not only to Regulation 168/2013 but it also has to be entirely coherent with the three delegated acts.

The EC representative reported that support from a number of Member States was received to improve the proposal. Also the recommended changes from the EC's legal service were included in this latest revision. He explained that the requested deadlines with respect to translation of the document set by DG translations to make the translations available in time for the vote in May could not be met owing to the continuous request for changes from stakeholders and the EC's efforts to reach a final compromise. He underlined the importance of the vote taking place in May. He provided 2 options:

a) to go ahead and vote in principle on the draft RAR r9 in the English version only.

b) postponing the vote until the TCMV meeting on 01 Jul 14 with the risk that the summer vacation period will prevent a quick adoption and publication process. He pointed out that the consequence of taking that option may be that no type-approval based on the new package might be possible on a voluntary basis until the end of 2014.

The EC representative requested the delegates to provide their preference, either to continue discussing Annex I regarding the information document template and to further improve it or to freeze the current state of the RAR proposal and to finalise the package as soon as possible, targeting its adoption and publication still before the summer break. In that case comments and detected errors would be collected and put in a tracking list. Regularly this list would be made publically available, for example as working document in the MCWG meetings. A corrigendum or revision would be issued in due course.

The IT representative welcomed the latest revision as a step forward but he deemed it necessary to further reduce data entries in the information document template as he perceived these as unnecessary.

The AT representative had submitted two questions in writing before the meeting and he inquired about the entries relevant to conversion of A2 / A3 motorcycle configurations. In his view the current RAR proposal would allow misuse. His second question concerned point 1.8 of Annex IV on CoC transitional provisions. He urged not to put all the entries of the new CoC in the comment section of the old CoC in the transition period as space is limited on a single sheet CoC.

The IT representative agreed with his colleague and reminded participants that in Italy only electronic CoCs are used in practice.

The UK representative supported the pragmatic transition from the old to the new CoC format but noted that for the items listed in point 5 of Annex V no system or component type-approval are possible when comparing this with Annex II of Regulation (EU) No 168/2013.

Madam Chair replied that the RAR has to mirror the requirements set out in the delegated acts and that both should be aligned if that is not the case already.

The AT representative requested to add the applicable Annex number to the table referred to by the UK representative and pointed out that it was physically not possible to grant for all the items from Annex II to Regulation (EU) No 168/2013 a component or system approval. The current selection was justified and acceptable in his view.

Madam Chair concluded that MS have the opportunity until 08 Apr 14 to provide comments on RAR r9. The main issue left concerned the amount of entries in Annex I. Owing to the reported timing constraints she invited the delegates not to request major changes anymore but just to fine-tune the document. The EC services would try to make the final version available for the MCWG meeting on 11 Apr 14 and this version would also be sent to DG translations. She kindly requested MS to come back soon in case the proposed voting procedure would not be acceptable.

9. AOB

Madam Chair informed that a draft Regulation on the administrative provisions supplementing the General Safety Regulation had been uploaded in CIRCA. This is the outcome of the discussions in the ad hoc working group. The main changes introduced by this draft were explained to TCMV. The UK representative underlined that the inclusion of Regulation 46-04 in this draft was absolutely necessary since Regulation 46-04 introduces new requirements on mirrors applicable to all new vehicle types from 1 June 2014. The representative from Croatia asked to correct their "e" mark (e25 instead of e28) in the draft. Member States were invited to send their comments on this draft to Peter Broertjes in charge of this file (Peter\_BROERTJES@ec.europa.eu) and to prepare their position for the next TCMV meeting.

#### ANNEX I

#### ATTENDANCE LIST 39<sup>TH</sup> TECHNICAL COMMITTEE – MOTOR VEHICLES (TCMV)

#### HELD IN BRUSSELS ON 1 APRIL 2014

#### MEMBER STATES

	BE		FOD Mobiliteit en Vervoer Environment Belgium
	BG		Permanent Representation Road Transport Administration
	CZ		Absent
	DK		Absent
	DE	Mr C. Albus Mr S. Paeslack Mr O. Eberhardt	Bundesministerium für Verkehr, Bau und Stadtentwicklung (BMVBS) KBA Federal Ministry of Transport, Building and Urban Development
	EE		Absent
	IE		Absent
	EL		Absent
	ES		Ministerio de Industria, Energía y Turismo Ministerio de Industria, Energía y Turismo
· ·	FR		UTACERAM Min. Ecologie, Energie, Développement durable Ministry for Foreign Affairs
	HR		State Office of Metrology/ Vehicle Homologation Department
	IT		Ministry of Infrastructure and Transport
	СҮ		Absent
	LV		Absent
	LT		Absent
	LU		Société Nationale de Certification et d'Homologation (SNCH)

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Société Nationale de Certification et

Romanian Automobile Register

Traffic and Communications Ministry

Swedish Transport Agency

Department for Transport

RDW (Vehicle Technology and Info Centre)

Ministry of Infrastructure and the Environment

Ministry of Infrastructure and Spatial Planning

Ministry of Transport, Reconstruction and Regional

d'Homologation (SNCH)

Absent

Absent

RDW

BMVIT

Absent

Absent

Development ·



#### **CANDIDATE COUNTRIES**

COMMISSION

DG ENTR/B/4



DG JRC

Mr A. Krasenbrink

#### ANNEX II

MEMBER STATE REPRESENTATIVES MOTOR VEHICLES

#### Member State representatives







EUROPEAN COMMISSION ENTERPRISE AND INDUSTRY DIRECTORATE-GENERAL

Sustainable Growth and EU 2020 Sustainable Mobility and Automotive Industry

## Real-driving emissions (RDE) project - rationale, calendar

## 1. Rationale

Member States face problems with ambient NO<sub>2</sub> concentrations. In particular in urban areas, air quality requirements as defined by the European Air Quality Directive (EC) No 2008/50 are often not met due to high NOx (NO + NO<sub>2</sub>) emissions from local traffic. Given the persisting exceedance of nitrogen dioxide (NO<sub>2</sub>) concentration levels, 18 Member States have requested more time to meet the established NO<sub>2</sub> air quality standards in many zones. The Commission raised objection for more than 50% of the zones. As a result, one infringement procedure has been already launched against one Member State, while for 16 other Member States the Commission has started the NO<sub>2</sub> pilot procedure.

This situation is mainly due to the NOx emissions of diesel light duty vehicles, which substantially exceed regulatory emission limits under real driving conditions. The regulatory NOx emission limits of light-duty diesel vehicles have decreased from 500 mg/km for Euro 3 in the year 2000 (there were no NOx limits specified for Euro 1 and 2 diesel vehicles) to 80 mg/km for Euro 6 in 2014. However, emissions under real driving conditions appear to have remained more or less constant during the various Euro steps. It should be noted that the gap between real driving and test cycle emissions in the first place applies to NOx emissions of diesel vehicles thus requires that emissions from those vehicles will be addressed first by the real driving emissions (RDE) procedure.

#### 2. Real-driving emissions (RDE) project

The Euro 5/6 co-decision Regulation 715/2007/EC relates the regulatory emission limits to "normal conditions of use" and not to a specific test cycle. Article 14 foresees that:

"The Commission shall keep under review... the test cycles used to measure emissions. If the review finds that these are no longer adequate or do not reflect real world emissions, they shall be adapted so as to adequately reflect emissions generated by real driving on the road."

Implementing the requirements of Regulation (EC) 715/2007, the Commission (JRC and DG ENTR) launched in January 2011 the "real-driving emissions of light duty vehicles" (RDE-LDV) working group, which aimed at developing a test procedure to directly assess the regulated emissions of light duty vehicles under real driving conditions. Due to the most pressing problem of unsatisfactory air quality in several Member States, the RDE procedure will be used, in the first place, to assess real-life NOx emissions from diesel vehicles. As from 2017/2018, in line with the Regulation (EC) 459/2012 amending

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Regulation (EC) 715/2007, the RDE procedure will also apply to the assessment of particulate number from gasoline direct injection (GDI) vehicles.

### <u>2.1 RDE – testing procedures</u>

In the course of the work of the RDE-LDV Group, two candidate procedures were investigated: a randomised test cycle and the use of portable emission measurements systems (PEMS). Following an in-depth analysis of both approaches, on-road testing with PEMS has been considered to be the preferred option and was further developed. The main advantage of a PEMS-based test procedure was the ability to test vehicles under a wide range of normal driving conditions in real life and thereby mitigating the risk that vehicles apply a special emission control strategy once being on a test bench. Vehicle manufacturers were given the possibility to develop a random cycle test procedure as an alternative, which could be used as a proof-of-concept procedure; however this proposal has not been accepted.

Nevertheless, the development of a random test cycle generator has not been abandoned. The Commission is currently investigating whether PEMS equipment is suitable for verifying PN emissions in a type-approval context. Should it turn out to be unlikely that a proper assessment of real-driving PN emissions can be performed with PEMS, a random test cycle will be further developed for this purpose, at least in first years of the application of the requirements resulting from the Regulation (EC) 459/2012.

### 2.2 RDE – data evaluation procedure

Following a selection of the PEMS testing procedure, a method for evaluating emissions data needs to be developed. A data evaluation method is necessary because on-road testing with PEMS covers comparatively long distances and can potentially be conducted under a wide range of non-standardised ambient and driving conditions. A data evaluation procedure has to ensure that tests are complete and conducted according to the test protocol under normal conditions of vehicle use. The data evaluation procedure shall limit the randomness of PEMS tests and reduce the risk of accepting a high emitting car (legislator's risk) or reject a low emitting one (vehicle manufacturer's risk).

Three distinct data evaluation methods have been proposed and analysed by the Commission, Member States and industry stakeholders.

#### 3. Legal implementation of the RDE provisions

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Deliverables of the RDE project will be introduced by Comitology into the EU typeapproval framework. With the implementation of the RDE provisions, the type-approval process (including in-use-conformity) will be equipped with a new test procedure for assessing the gaseous pollutant emissions of light-duty vehicles. The new RDE procedure shall be applied at type approval in two steps:

- 1. As a test procedure (without mandatory application of NTE emission limit(s) but recording of the results in the CoC) as soon as possible, but not earlier than the mandatory Euro 6 dates (1 September 2014) for new vehicle types.
- 2. As a test procedure with mandatory not-to-exceed (NTE) emission limit(s) from 1 September 2017/18 for all new type approvals/new vehicles.

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## 4. Timetable of a regulatory adoption

## 4.1 RDE for gaseous emissions

Short description	Responsible	Time frame
Drafting of "physical" PEMS testing for gaseous emissions (focus on conventional powertrains, excluding hybrids).	JRC & stakeholders	On-going
Drafting of PEMS evaluation method (focus on conventional powertrains, excluding hybrids).	JRC, RDE expert group	On-going
Amendments to "physical" PEMS testing for gaseous emissions and PEMS evaluation method for hybrids.	JRC, RDE expert group	September 2014 to March 2015 (indicative)
Definition of boundary conditions both related to the driving dynamics (within the data evaluation methods) and not related to the driving dynamics (such as ambient temperature, altitude, humidity, cold start,)	COM & stakeholders	On-going
Definition & drafting of vehicle families for initial type approval testing <sup>1</sup> .	COM & stakeholders	On-going
Discussion on the RDE procedure in MVEG and TCMV	СОМ	As from April 2014
Definition of NTE emission limits for gaseous pollutant emissions on the basis of existing emission regulation	COM & stakeholders	September 2014 – March 2015 (indicative)

## 4.2 RDE for particulate emissions (PN)

Development of random test cycle as backup procedure for assessing PN emission limits	TNO	On-going work, should be finished in September 2014
Definition of non-dynamic boundary conditions (temperature, altitude, general test route requirements)	COM & stakeholders	June 2014

<sup>&</sup>lt;sup>1</sup> Any deviation from the existing type 1 family concepts would have to be justified by technical reasons. It may however be considered to combine "full" PEMS testing to larger families and combine it with some simplified PEMS testing to all type approval type 1 families within the larger family.

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Definition & drafting of vehicle families <sup>1</sup> and statistical requirements for in-service conformity	COM & stakeholders	September 2014 – March 2015 (indicative)
Feasibility study of PEMS equipment for PN emission testing	JRC	Ongoing work, results should be available in March 2014
Development of "physical" PEMS testing for PN emissions	JRC & stakeholders	February 2014 to June 2015
Revision of PEMS evaluation method developed for gaseous pollutant emissions (if applicable) OR development of data evaluation method for random test cycle measurements (if applicable) for the purpose of measuring PN emissions.	JRC & stakeholders	September 2014 to March 2015
Definition of NTE emission limits for PN emissions on the basis of existing emission regulation	COM & stakeholders	September 2014 to March 2015 (indicative)

# 4.3 Administrative rules and general requirements

Technical rules for independent (e.g. voluntary Member State) surveillance testing: statistics for challenging type approval results etc.	COM & Member States	Mid 2014 to end 2015
Other measures (confirmatory testing, remedial measures, reporting procedures,)	COM & Member States	Mid 2014 to end 2015