

# **Working Group on “Motorcycles” (MCWG)**

## **21 October 2010**

**Overview and background information on  
Regulation for approval and market surveillance  
of L-category vehicles**



**European Commission**  
Enterprise and Industry

# Agenda








- Introduction
- Identified concerns and objectives
- Scope
- Impact Assessment
- Examples of features addressed by the legal framework
- Legal structure of the regulation
- Market surveillance
- Simplification
- Re-classification measures
- Safety measures
- Environmental measures
- Vehicle construction measures

## Identified concerns and objectives

- Identified concerns
  - the complexity of the current legal framework;
  - the level of emissions and its increasing share in total road transport emissions, which are decreasing overall;
  - safety aspects related to type-approval requirements for vehicles;
  - the lack of a legal framework for vehicles fitted with new technologies;
  - the entry of products into the EU market which do not comply with the current type-approval requirements regarding functional vehicle safety and/or environmental protection.
- Main Objective
  - Efficiently and effectively address the above listed issues.



# Scope of the proposal (1)

- 2-wheel vehicles (powered two wheelers)

Category & Category Name	Sub category & Sub category name	Example
L1e, light two-wheel vehicle	L1Ae powered cycle	
	L1Be Moped	 
L2e Three-wheel moped		
L3e, motorcycle	A1, A2, A3 < 130 km/h ? 130 km/h	 
L4e, motorcycle with side car	-	



## Scope of the proposal (2)

- 3-wheel vehicles (tricycles)

Category & Category Name	Sub category & Sub category name	Example
L5e, tricycles	L5Ae Tricycles	
	L5Be Commercial tricycles	

## Scope of the proposal (3)

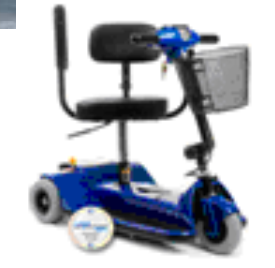
- 4-wheel vehicles (quadracycles)

Category & Category Name	Sub category & Sub category name	Example
L6e, Light quadricycle	L6Ae Light on-road quad	
	L6Be Light mini-car	
L7e, Heavy quadricycle	L7Ae Heavy on-road quad	
	L7Be Heavy mini-car	

# Vehicles not in the scope of the proposal (4)



- maximum design speed not exceeding 6 km/h;
- exclusively intended for use by the physically handicapped;
- exclusively intended for pedestrian control;
- exclusively intended for use in competition under on-road or off-road conditions;
- exclusively intended for use by the armed forces, law enforcement agencies, civil defence services, fire brigades or public-works bodies;
- agricultural or forestry vehicles, machines, motor vehicles
- primarily intended for off-road use and designed to travel on unpaved surfaces;
- light powered cycles with pedal assistance;
- self-balancing machines;
- vehicles not equipped with at least one seating position.



## Scope of the proposal (5)

- Framework related to (TYPE-) APPROVAL of L-category vehicles
  - Manufacturers can obtain approval for L-category vehicle types (W V T A), systems, components and separate technical units intended for such vehicles in one Member State.
  - If it meets the Community technical requirements then the manufacturer can market it EU-wide with no need for further tests or checks. Registration must be granted on simple presentation of a certificate of conformity.



# Impact Assessment

- Essential questions after pros and cons of policy options listed when developing measures:
  - How to be effective in achieving the objective ?
    - effectiveness: doing "right" things, i.e. setting right targets to achieve an overall goal (the effect)
  - How to be efficient in achieving the objective ?
    - efficiency: doing things in the most economical way (good input to output ratio, time = money)
  - Coherence of the option with overarching EU objectives, strategies and priorities
  - Consideration of potential (undesirable) side effects.

## Examples of features addressed by the legal framework

- The proposal for the proposed Regulation includes among others the following features:
  - Market surveillance;
  - Obligatory fitting of Advanced Brake Systems;
  - Abandon 74 kW power restriction;
  - Anti-tampering measures;
  - Re-categorisation;
  - Access to repair and maintenance information;
  - New emission steps Euro 3, Euro 4, Euro 5 (and Euro 6 for L3e motorcycles only);
  - All L-category vehicle categories using one single emission laboratory test cycle (revised WMTC);
  - Mandatory introduction of on-board diagnostic stage I.

# Legal structure

## I. Major change:

- Previously: directive ; now: regulation

## II. Implementation of the split level approach

## III. Modifications triggered by the new Treaty:

- delegated acts
- implementing acts
- other provisions

## Legal structure

- I. From a directive to a regulation (1)
  - The preceding acts were directives.
  - The regulation is the more adequate format for this measure since :
    - there is not much room for MS to implement. Certain decisions (e.g. choice of national authority) can also be left to MS in a regulation;
    - no need to control correct transposition by MS;
    - no additional delays for transposition needed in the context of the regular updates of the requirements to technical progress.

## Legal structure

- I. From a directive to a regulation (2)
  - consequently, the existing texts (2002/24/EC; 2007/46/EC) needed reformulation, in order to be as precise as necessary for a regulation.

## Legal structure

- II. Implementation of the ‚split level approach‘ (1)
  - In the past years, the ‚split level approach‘ was introduced in type approval legislation. This means that one codecision act is implemented by one Comitology act (recently: regulations in both cases).
  - Previously, the legislation (2002/24/EC; 2007/46/EC) was based on „separate legal acts“ (directives, later on regulations) that contained the regulatory requirements for certain items.

## Legal structure

- II. Implementation of the ‚split level approach‘ (2)
  - This regulation will now be the only act adopted by Council and Parliament with regard to the type approval of L-category vehicles. Thus, it will be much more comprehensive than the preceding Directive 2002/24/EC.
  - It will not be called „framework regulation“ any longer, since there will be no other act of equal legal ranking (before: several Directives/Regulations, one of them setting the regulatory frame).

## Legal structure

- III. Consequences of the new Treaty provisions (1)
- 1. Delegated acts (1)
  - Until now, the „separate legal acts“ and recently the codecision regulation + the implementing Commission regulation included both the technical details as well as the harmonised administrative requirements (forms, test procedures, etc.).
  - The TFEU now obliges the legislators to separate „delegated acts“ under Article 290 from „implementing acts“ under Article 291. Consequently, the regulation includes provisions empowering the Commission to adopt delegated acts and implementing acts.



# Legal structure

- III. Consequences of the new Treaty provisions (2)
- 1. Delegated acts (2)
  - delegated acts are „non-legislative acts of general application to supplement or amend certain non-essential elements of the legislative act“.
  - they include all the detailed technical requirements which are not so essential that Council and Parliament would want to determine them themselves in the regulation adopted in ordinary legislative procedure.
  - the empowerments in the regulation follow the requirements in Article 290 TFEU

## Legal structure

- III. Consequences of the new Treaty provisions (3)
- 2. Implementing acts (1)
  - Implementing acts lay down the necessary „uniform conditions for implementing legally binding Union acts“ in accordance with Article 291.
  - in type-approval legislation, EU type-approval can be issued by national authorities in all MS; they will be valid throughout the EU.
  - therefore, it is essential that the national authorities apply the same test procedures when examining whether the harmonised substantive requirements are met and that they use harmonised templates for certificates issues, etc.

## Legal structure

- III. Consequences of the new Treaty provisions (4)
- 2. Implementing acts (2)
  - The empowerment for such harmonisation of national implementation of the regulation follows the requirements of Article 291.
- III. Consequences of the new Treaty provisions (5)
- 3. Other provisions
  - new legal base
  - transmission to national parliaments
  - signature

## Legal structure

- Anticipated structure regulation on approval of L-category vehicles.
- **Co-decision** act (“ordinary legislative procedure”, Article 114)
- **Delegated** acts
  - Regulation on environmental and propulsion performance requirements (**REPPR**);
  - Regulation on vehicle functional safety requirements (**RVFSR**);
  - Regulation on vehicle construction requirements (**RVCR**).
- **Implementing** act
  - Regulation on administrative requirements (RAR)
- **First application:** 01 January 2013

## Why Market Surveillance?

- Commission strategic objective for 2010 and beyond:

### ***A NEW STRATEGY FOR THE SINGLE MARKET AT THE SERVICE OF EUROPE'S ECONOMY AND SOCIETY***

- **2009: Political Guidelines of President Barroso** call for
  - a major analysis of the "missing links" in the internal market
  - a major package of **measures to re-launch the single market** in time for the 20th anniversary of the 1992 project
- **2010: Monti report on a new strategy for the single market:**
  - To maintain a dynamic and expanding single market for goods:
    - the **goods package** adopted in 2008 must be fully implemented,
    - Special attention to mutual recognition and **market surveillance**,
    - principles of the **New Legislative Framework (NLF) to be extended to other areas of product legislation**

## Market surveillance

- New Legislative Framework (NLF)
- 2 complementary instruments:
  - **Regulation 765/2008/EC** - requirements for **accreditation** and **market surveillance** relating to the marketing of products;
  - **Decision 768/2008/EC** - a **common framework** for the **marketing of products**
- Horizontal framework for **Community harmonisation legislation** = legislation fixing conditions for the marketing of products
- **Objective:** Improve the functioning of the internal market in practice

# Market surveillance

- Main objectives
  - **Reinforce** national market surveillance
  - Ensure a **more coherent** level of intervention and controls throughout EU
  - Ensuring **equal action** against non-compliant products in EU = ensuring **equal conditions** for economic operators
  - **Protect** fair economic operators **against unfair competition** from operators ignoring or by-passing the rules of the game
  - **Protect** safety and environment
  - Restore **confidence** in EU legislation

# Market surveillance

- NLF – 2 complementary instruments

## REGULATION 765/2008/EC

- Accreditation
- Market surveillance
  - EU internal
  - imported products
- **CE** General principles [not directly relevant for automotive approval legislation]
- Financing
- Directly applicable (from 1 January 2010)

## DECISION 768/2008/EC

- common elements of product legislation (obligations of economic operators, definitions, etc)
- toolbox for future legislation or amending existing legislation
- no immediate effects for individuals or Member States if not included in sector specific legislation
- relevant tools incorporated in proposal for type-approval of L-category vehicles



## Market surveillance

- How does Regulation 765/2008 affect sectoral legislation?
  - Member States and Commission services must apply Regulation 765/2008 **in addition to sectoral legislation** (from 1/1/2010)
  - **Applies to all sectoral legislation** fixing conditions for the **placing on the market of products** (i.e. including type-approval legislation)
  - **Additional obligations** for national authorities when implementing sector specific legislation
  - Consequences for cooperation with Commission, administration of **safeguard clauses and recall procedures**

## Market surveillance

- New obligations arising from Regulation 765/2008/EC
- MS have to inform other MS and Commission on **competent authorities and market surveillance programmes** (general or sectoral)
- **!! MS have to take measures** against **non compliant products** (Article 16.2 and 20)
- **!! MS have to inform** Commission and other MS on **measures** taken **against non-compliant products** (Art 22 and 23)
- **!! Cooperation:** MS to **participate in European co-operation** activities (Art 24.1) and provide **mutual assistance** (Art 24.2)

## Market surveillance

- Regulation 765/2008/EC: obligations on restrictive measures

- Non-compliant product found



- Take action



- Inform Commission and other MS



- serious cases: RAPEX
- other cases: Art 23

- Safeguard clause?

- withdrawal, recall, prohibition of marketing or other restrictive measure

RApid information EXchange for **serious cases** of non-compliance  
(= products presenting a serious risk)

# Market surveillance

- Decision 768/2008/EC: relevant tools for L-category legislation (1)
- **Definitions** (placing on the market, market surveillance,..)
- **Traceability of products** placed on the market
- **Respective responsibilities of economic operators** in the supply chain (manufacturers, importers, distributors)

## Market surveillance

- Decision 768/2008/EC: relevant tools for L-category legislation (2)
- Responsibilities of and co-operation between national authorities involved in enforcement of the legislation (type-approval, market surveillance, and border control)
- Criteria for the designation, monitoring and quality of technical services
- Safeguard procedures and recall of vehicles
- Procedures for ensuring conformity of production

## Market surveillance

- Market surveillance in L-category vehicle type-approval Regulation
- Provide sectoral contribution to strategic objective for the **re-launch of the single market**.
- **Address** major **concerns** reported by European industry regarding **non-compliant products** placed on the EU market (originating from Far East).
- **Respond to EU Member States request** in Technical Committee for Motor Vehicles **to complement type approval with market surveillance**.

## Market surveillance

- Market surveillance in L-category vehicle type-approval Regulation
- give priority to type-approval legislation for L-category vehicles.
- complement with proposal in 2011 to include market surveillance in type approval legislation for vehicles of categories M, N & O.
- need for including market surveillance in type approval legislation for agricultural and forestry tractors to be re-assessed later

# Simplification

- Simplification of existing EU legislation - specific objectives
  - Develop a less complex regulatory approach that allows efficiency improvements, so less time loss in the analysis and a clearer text to avoid substantial gaps between the interpretation of the text and the spirit of the law;
  - Less burdensome adaptations to technical progress;
  - To reduce duplications with international standards (UNECE regulations) so that stakeholders are not confronted with several sets of requirements addressing the same aspects.



## Re-categorisation measures

- Re-categorise L-category vehicles
  - Dedicated requirements for gaseous / alternative fuels or in more generic terms, alternative vehicle propulsions
  - Legislation at European Union level through a **tighter grid** of vehicle type categorisation with dedicated measures for the different vehicles and propulsion technologies
  - Exclude off-road quads from the Framework Regulation
  - Introduce a new sub-category for stronger powered cycles
  - Article 4 and Annex I of the proposed codecision act: (sub-) categories and category criteria

## Safety measures

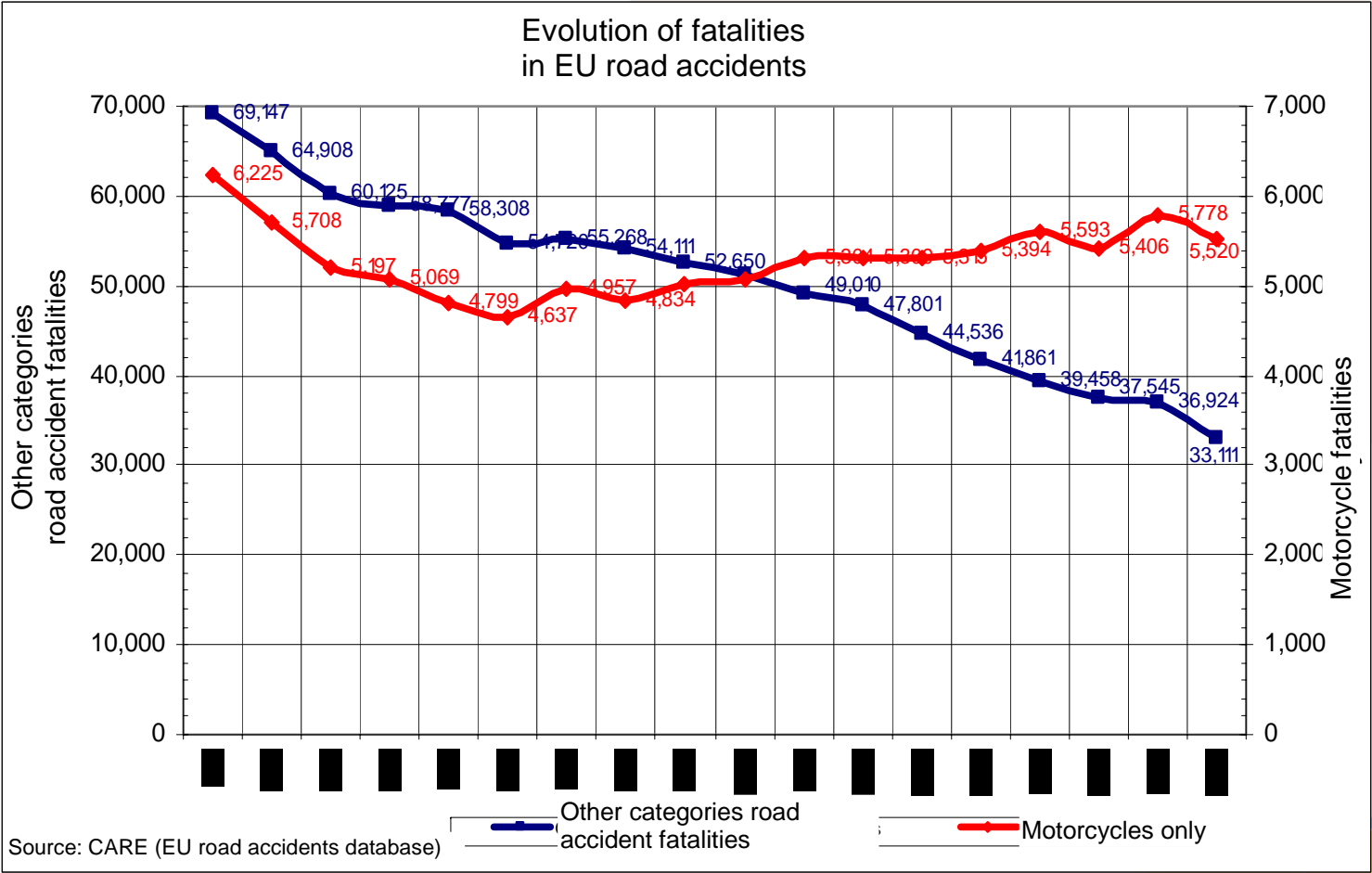
- Safety measures why ?

L-category drivers face a much higher risk of a fatal or serious accident than other drivers. The fatality rate per million kilometres travelled is, on average, **18** times greater than passenger cars, and, in 2006, L-category vehicles accounted for **2%** of distance travelled, but accounted for **16%** of road deaths in the EU-25 (ETSC, 2007). Furthermore, while other vehicle modes have shown significant decreases in fatalities and serious injuries over time, those for L-category vehicles remained static or even slightly increased.

In 2008 **5,520** PTW riders **died** in road accidents. In addition the number of **heavily injured** riders is estimated to be **5.5 to 13 times higher** than the number of fatalities (30,000 – 72,000 riders). The number of **slight injuries**, which is even more difficult to estimate, might be between **12 to 28 times higher** (66,000 – 155,000 riders) in the EU-27.

# Safety measures

- Safety measures why ?



# Safety measures

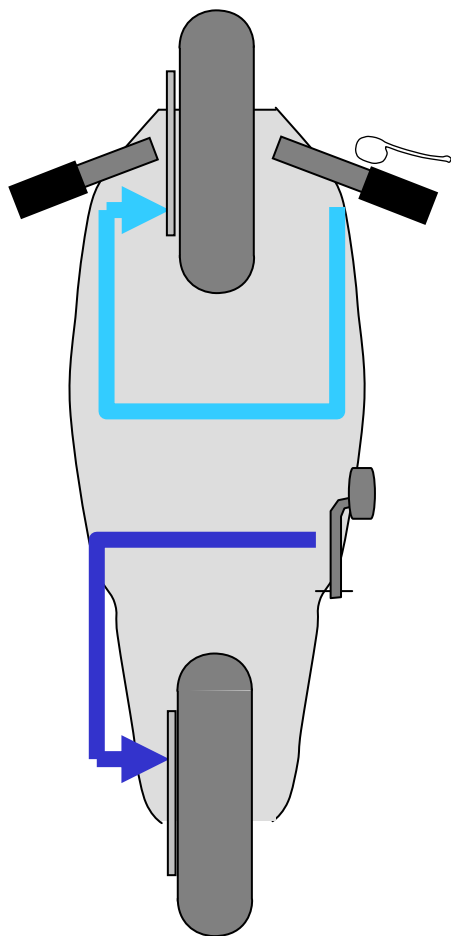
- Safety: condition of being safe; freedom from danger, risk, or injury.
- Two primary safety fields
  - Accident avoidance
    - Human being
    - **Technical features of the vehicle**
    - The environment in which the vehicle is operated
  - Mitigation of injuries
    - Protection just before / during the crash
    - Protection after the accident

## Safety measures

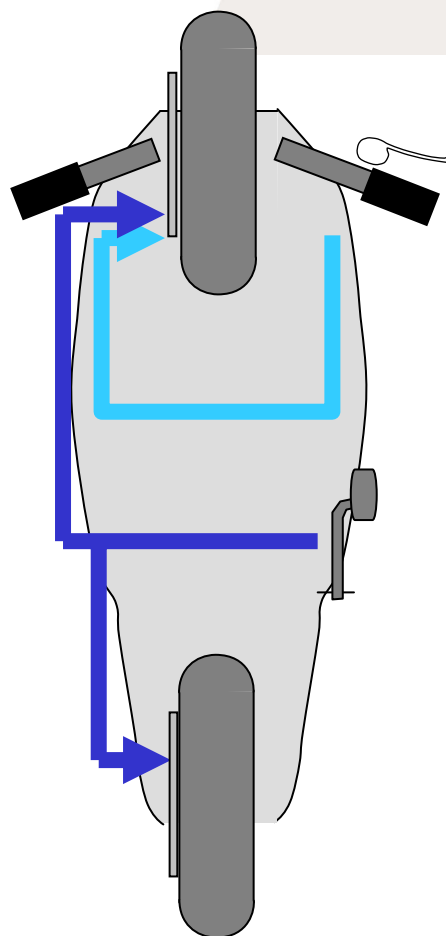
- Obligatory fitting of *Advanced Brake Systems*
  1. No change;
  2. *Anti-lock Brake Systems* on all Powered Two Wheelers (PTWs);
  3. *Anti-lock Brake Systems and/or Combined Brake Systems* on less powerful motorcycles. *Anti-lock Brake Systems* on more powerful motorcycles (medium and high performance);
  4. Same as 3 but different threshold to distinguish between less and more powerful motorcycle;
  5. Industry self-regulation.

# Safety measures

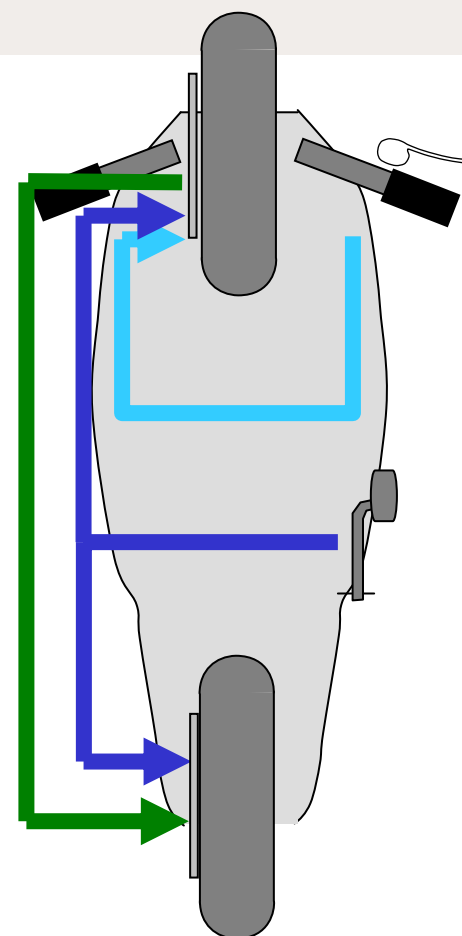
- **Basic Hydraulic Braking Systems & Combined Brake System (CBS)**



Conventional brakes: hydraulic (or mechanical) actuation of calipers



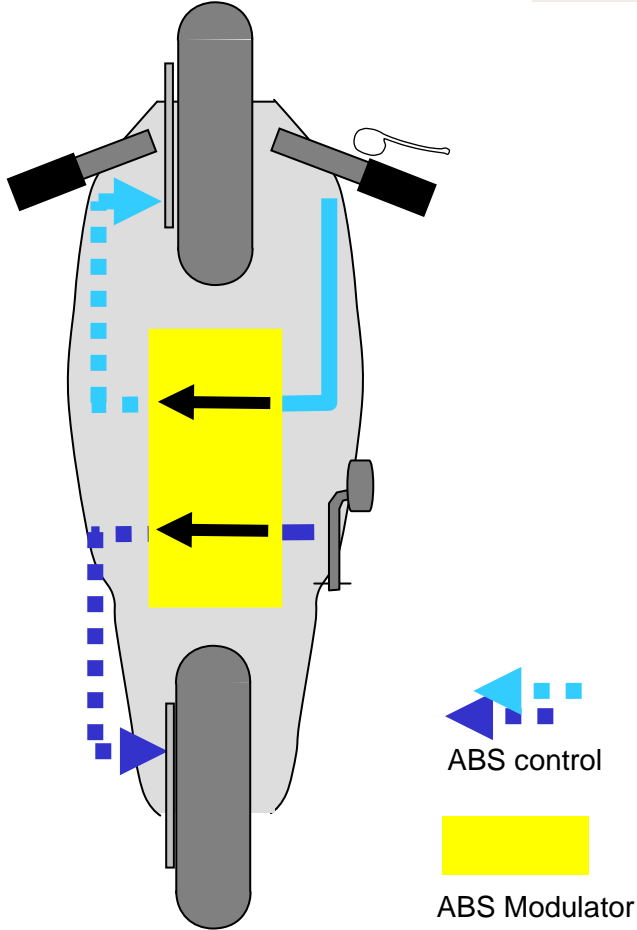
Single Combined Brake System (CBS): rear brake actuation brakes both wheels



Dual Combined Brake System (CBS): Rear and front brake actuation brakes both wheels

# Safety measures

## Anti-lock Braking System (ABS)



2 channel brake system with 2 channel ABS

**Double channel ABS:  
Anti-lock function activated  
on front and rear brakes.**

*Anti-lock function:  
Prevention of wheel-lock,  
to preserve stability and  
allow the use of full brake power.*

## Safety measures

- [Advanced](#) Brake Systems
  - See for yourself why preferably an *Anti-lock* Brake System must be fitted on powered two-wheelers (search term: ABS motorcycle):
    - Emergency braking with an ABS-equipped motorcycle  
<http://www.youtube.com/watch?v=3d6iu-1Wfxw>
    - ABS vs. No ABS  
<http://www.youtube.com/watch?v=-Zv3SacI7JQ&NR=1>
    - ABS en acción  
<http://www.youtube.com/watch?v=SIjQ8krM5SI&NR=1>
- Obligatory safety feature: **Automatic Headlamp On**

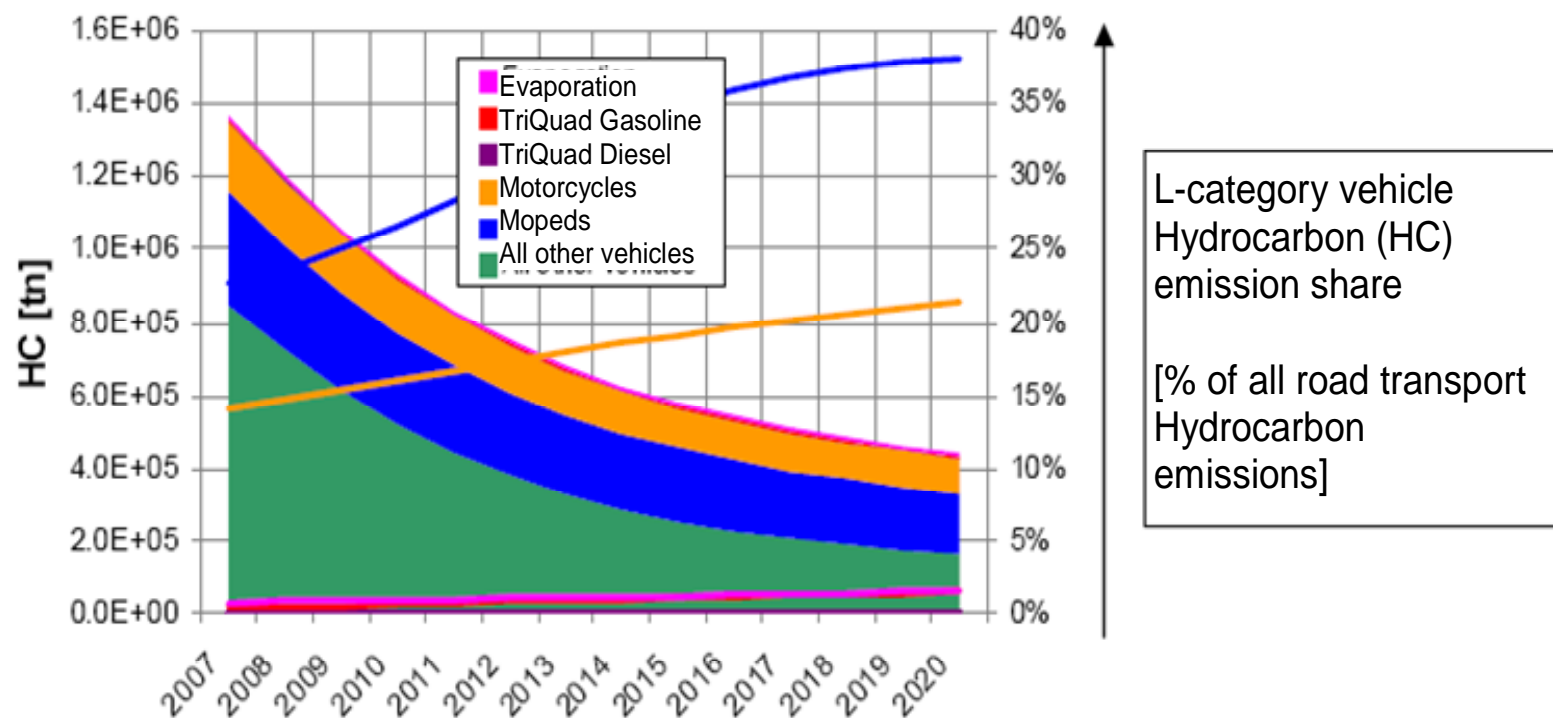


## Safety measures

- 74kW power limitation for motorcycles
  1. No change;
  2. Repeal the option given to Member States to limit the power to 74kW;
  3. Set a harmonized limit of 74kW;
  4. Use an alternative limitation, e.g. power to mass ratio.

## Environmental measures

- Identified concerns: high share of hydrocarbons, carbon monoxide and volatile particles emitted by L-category vehicles



**Figure 1: Trend over time of L-category vehicle, absolute and relative share of hydrocarbon emissions if no change in policy.**

NB. The “all other vehicles” category includes passenger and delivery cars, trucks and busses. Source: the LAT report

Primary Y-axis (left): HC = HydroCarbon emissions; 2.0E+05 = 200,000, 1.0E+06 = 1,000,000, 1tn=1000 kg.

Secondary Y-axis (right): L-category vehicle Hydrocarbon (HC) emission share as % of all road transport Hydrocarbon emissions

## Environmental measures

- Annex V of the proposed codecision act

Test type	Test description
I	Tailpipe emissions after cold start
II	Environmental requirements related to road worthiness
III	Emissions of crankcase gases
IV	Evaporative emissions
V	Durability of pollution control devices
VI	Low-temperature test (not applicable)
VII	CO <sub>2</sub> emissions / fuel consumption
VIII	On-board diagnostics (OBD)
IX	Sound level
X	Electromagnetic compatibility

## Environmental measures

- Vehicle type approval environmental measures, new or revised environmental measures for the type approval of new types of vehicles:
  - Result of assessment, emission steps:
    - Euro 3 (Euro 4 for L3e motorcycles): 2014;
    - Euro 4 (Euro 5 for L3e motorcycles): 2017;
    - Euro 5 (Euro 6 for L3e motorcycles): 2020.
  - Environmental effect study to be conducted in 2015 – 2016 timeframe before taking final decision to mandate Euro 5 step.

## Environmental measures

- Vehicle type approval environmental measures, new or revised environmental measures for the type approval of new vehicles.
  - Type approval requirements for CO<sub>2</sub> (green house gas emission) and fuel consumption
    1. No change;
    2. Type Approval for CO<sub>2</sub> and fuel consumption; measurement and reporting, no type approval limit, paving the ground for vehicle labelling;

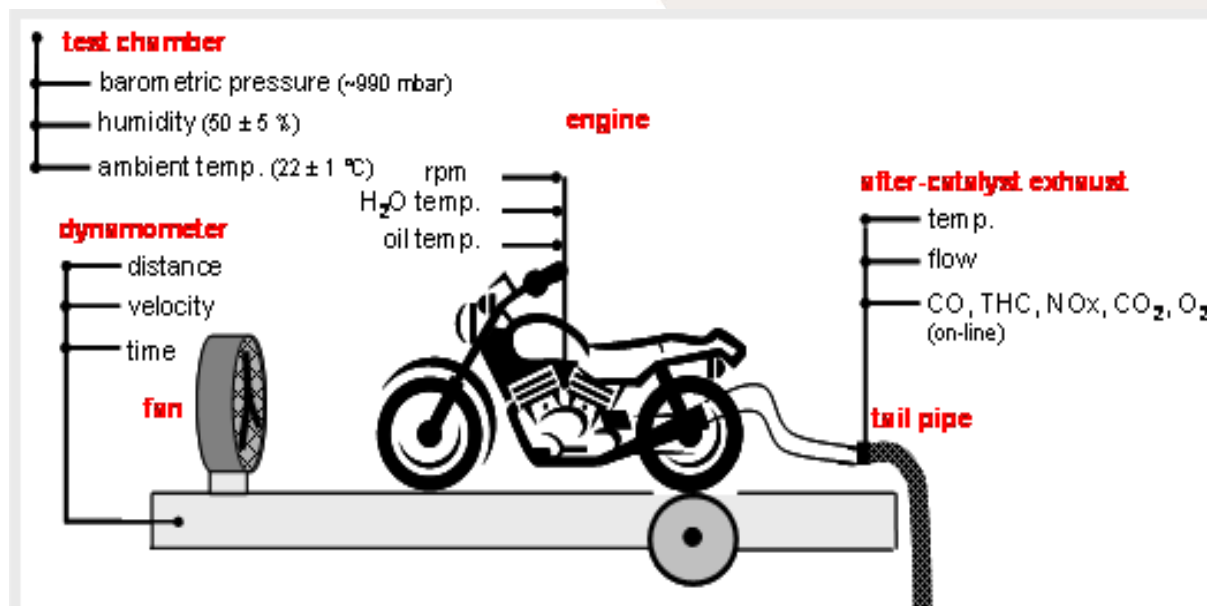
## Environmental measures

- Emission laboratory test cycle
- Vehicle type approval environmental measures, new or revised environmental measures for the type approval of **new** vehicles.
  - Use of the stage two World Motorcycle Testing Cycle (WMTC) for all L-category vehicle classes
    1. No change;
    2. Use of the stage two World Motorcycle Testing Cycle (WMTC) for all L-category vehicle classes.

# Environmental measures

- **Emission laboratory tests**

- The exhaust gas will be collected in plastic bags and analysed after the test is finished.
- The test result for the poisonous constituents (THC, CO, NOx and PM) is expressed in **milligrams per driven kilometre**.
- This represents the amount in grams of pollutants, emitted in average by the vehicle when driving 1000 m.



# Environmental measures

## Overview current used emission test cycles for vehicle Type Approval - proliferation

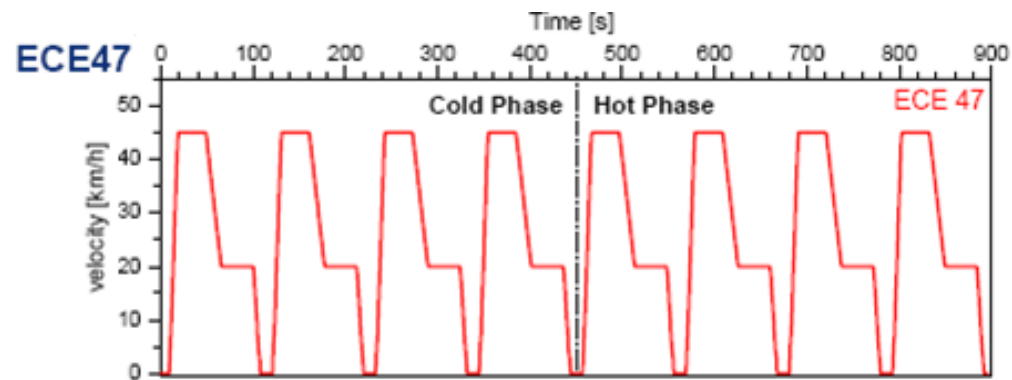
- 2- and 3-wheel mopeds and light scooters, categories L1e and L2e (test cycle: **ECE47**)



- Light quadricycles, category L6e (test cycle: **ECE47**)



- L1e, L2e and L6e vehicles are type approved using **ECE47** test cycle:

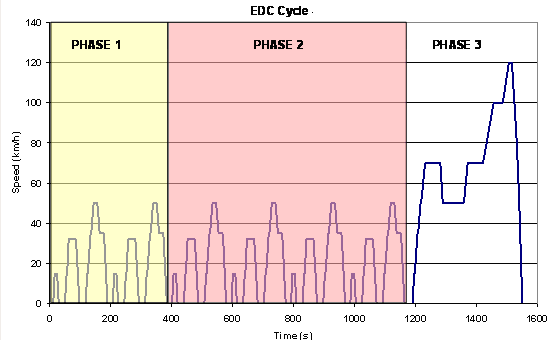
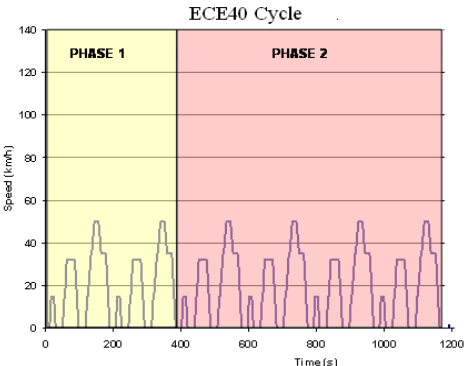




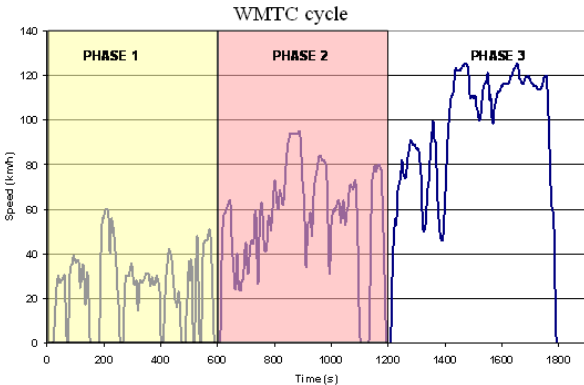
# Environmental measures

## Overview current used emission test cycles for vehicle Type Approval - proliferation

- Current used test cycle for vehicles of categories L3 (motorcycles and scooters)
  - Light L3 & L4 vehicles (**ECE40**)
  - Heavy L3 & L4 vehicles (**EDC**)



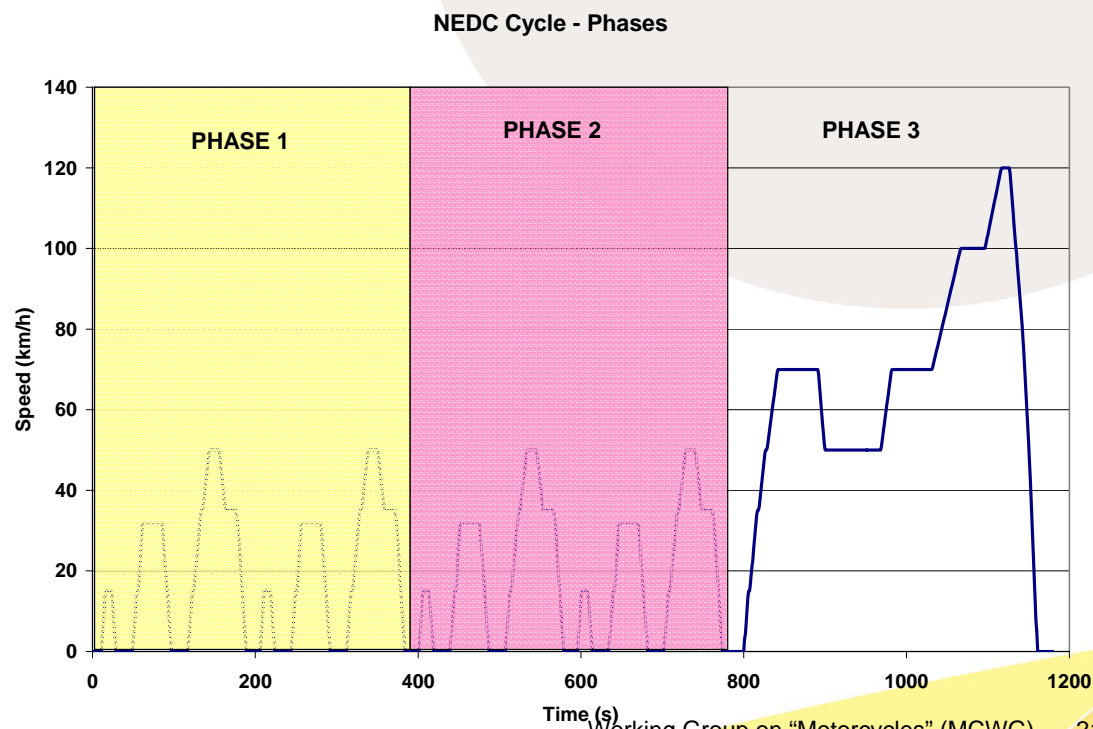
- **Alternatively** World-harmonised Motorcycle Test Cycle (**WMTC**), used as test cycle for light and heavy vehicle of categories L3 & L4



# Environmental measures

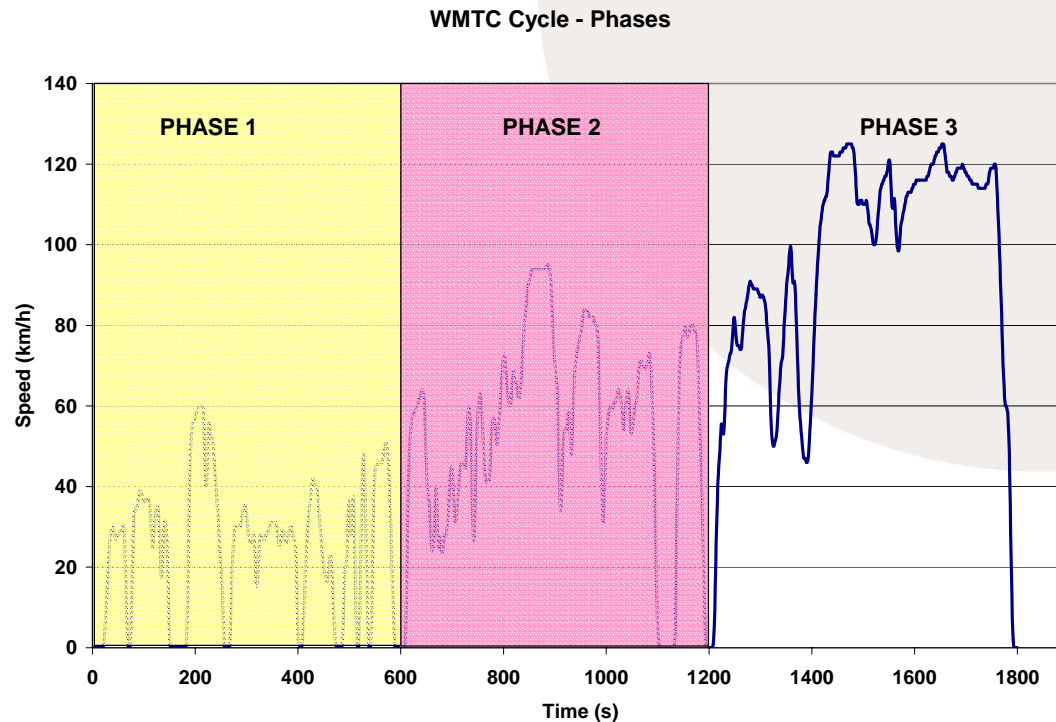
## Overview current used emission test cycles for vehicle Type Approval - proliferation

- Current used test cycle for **passenger cars**, categories M1, M2, M3 **and utility vehicles** N1, N2, N3.
- From the smallest to the biggest model passenger car and utility vehicles, only one single emission test cycle is used: **New European Drive Cycle**



# Environmental measures

- **L-category vehicle long term proposal**
- **NEW:** Every L-category vehicle class type approved with **only one single world harmonised test cycle** starting from 2020: **WMTC**

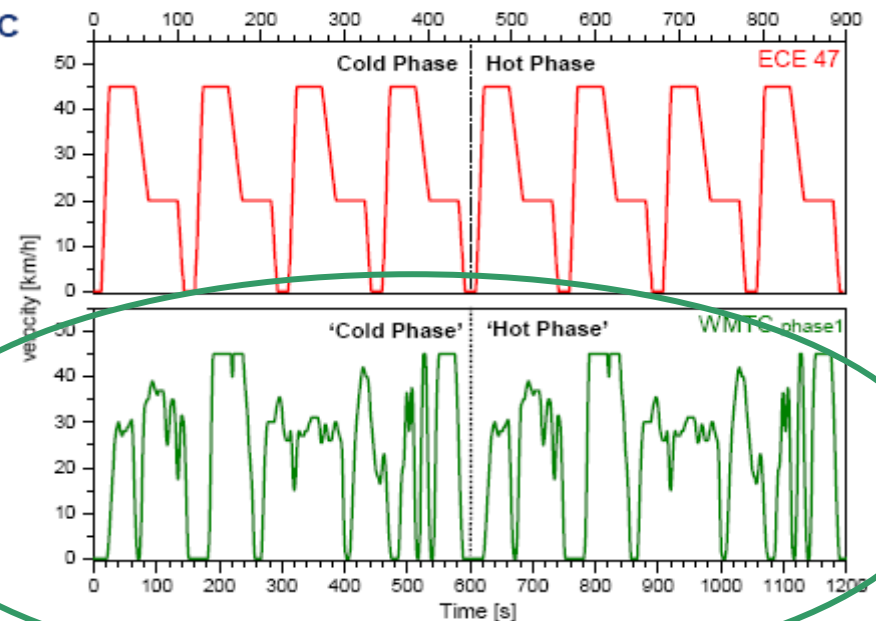


# Environmental measures

- After 2020 all new L-category vehicles type approved with one single test cycle: WMTC
- Special case perceived as controversial by Moped manufacturing industry  
Replace conventional ECE47 test cycle with part 1 of WMTC test cycle.

New test cycle (bottom) based on urban (low vehicle speed) fraction of WMTC test cycle replacing traditional ECE47 cycle (top)

Driving Cycles:  
ECE47 & WMTC



## Environmental measures

- Vehicle type approval environmental measures, new or revised environmental measures for the type approval of new vehicles
  - Evaporative emissions test and limit
    1. No change;
    2. Replacement of all new carburetted models with Electronic Fuel Injection (EFI)
    3. Evaporative emissions test and limit enforcing evaporative emission control for all L-category vehicles

## Environmental measures

- Vehicle type approval environmental measures, new or revised environmental measures for the type approval of new vehicles.
  - Assessed durability requirements
    1. No change;
    2. Actual durability requirements;
      - Powered cycle: 5 000 – 6 000 km;
      - 2 & 3 wheel mopeds, light on-road quad: 10 000 – 12 000 km;
      - Two-wheel motorcycle, with and without side-car ( $v_{\max} < 130$  km/h), tricycle, light & heavy mini-car 18 000 – 30 000 km;
      - Two-wheel motorcycle, with and without side-car ( $v_{\max} \geq 130$  km/h), tricycle, heavy on-road quad 30 000 – 50 000 km.
    3. Actual durability requirements, increased useful life.

## Vehicle construction measures

- On Board Diagnostic (OBD) system **and** access to repair and maintenance information
1. No change (No introduction of OBD systems and/or access to repair information);
  2. Application of OBD systems and access to repair and maintenance provisions equivalent to passenger cars;
  3. Use of Best Available Technology (OBD stage 1), standardised for all L-category vehicle classes. Access to repair and maintenance provisions, similar as for passenger cars.

## Vehicle construction measures

- Measures to prevent powertrain tampering
  1. No change;
  2. Repeal Chapter 7 of Directive 97/24/EC, currently superseded anti-tampering measures;
  3. New measures on anti-tampering for all L-category vehicle (sub-) categories



# Outlook on the development of delegated and implementing act proposals

- Step 1
  - Regulation on environmental and propulsion performance requirements ([REPPR](#))
  - Regulation on vehicle functional safety requirements ([RVFSR](#))
- Step 2
  - Regulation on vehicle construction requirements ([RVCR](#)).
  - Regulation on administrative requirements ([RAR](#))

## More information ?

[http://ec.europa.eu/enterprise/sectors/automotive/documents/proposals/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/automotive/documents/proposals/index_en.htm)

# THANK YOU FOR YOUR ATTENTION !

