Revision and amendment of international L-category vehicle approval in the area of environmental and propulsion performance requirements: Roadmap

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- **Categories:**
  - Moped issue
  - Quadricle issue - Sub categories
  - Motorbike issue

- **Performance tests:**
  - Measurement of maximum torque and power for engines and motors
  - Measurement of maximum speed for vehicles

- **Tailpipe Emissions:**
  - Combination of a range of tests: Type I, II, III, VII, VIII
  - Measure vehicle toxic and CO2 emissions.
  - Fuel consumption and range, onboard diagnostic - environmental part

- **Durability:**
  - Expirative emissions: Which requirements to use?

- **Evaporative emissions:**
  - OBD: Which requirements to use?

- **OBD:**
  - Non-open standards

- **Documents:**
  - Roadmap (EC)

- **Meetings:**
  - MCWG
  - GRPE & Stakeholder consultation meeting
  - WP.29

- **Roadmap:**
  - Mid-term report
  - Final report, L-cat IEPPR by EC
  - Consultants
  - Draft final report – L-cat IEPPR by EC consultants

- **Issue:**
  - Harmonising specifics of durability tests
  - Harmonising test methods
  - Test chemicals, temperatures, tolerances, equipment
  - Harmonising cycle between regions
  - Rectifying any issues with the specifics of the evaporative tests
  - Non-open standards

- **Categories Defined in UN RE3:**
  - Maximum speed
  - 45 > 28 (EC)
  - 48 > 30 (UK)
  - 50 > 31 (US, EU, UN)

- **Maximum speed:**
  - 45 - 28 (EC)
  - 48 - 30 (UK)
  - 50 - 31 (US, EU, UN)

- **Maximum speed:**
  - 45 - 28 (EC)
  - 48 - 30 (UK)
  - 50 - 31 (US, EU, UN)

- **Moped issue:**
  - Maximum speed
  - 45 > 28 (EC)
  - 48 > 30 (UK)
  - 50 > 31 (US, EU, UN)

- **Motorbike issue:**
  - Addition of Enduro and Trail variants of L3e-A1/2/3

- **Type VII issue:**
  - Perform Type VII test (CO2 etc)
  - Consolidate with Type I and III

- **Type VII issue:**
  - Perform Type VII test (CO2 etc)
  - Consolidate with Type I and III

- **Performance measure issue:**
  - Include kW in addition to capacity

- **Hybrid/electric issue:**
  - Include weight of the batteries

- **Issue:**
  - Harmonising test methods
  - Test chemicals, temperatures, tolerances, equipment
  - Harmonising cycle between regions
  - Rectifying any issues with the specifics of the evaporative tests

- **Issue:**
  - Harmonising test methods
  - Test chemicals, temperatures, tolerances, equipment
  - Harmonising cycle between regions
  - Rectifying any issues with the specifics of the evaporative tests

- **Definition of vehicle weight/mass needs to be chosen**

- **Roadmap (EC):**
  - Dec-11
  - Jan-12
  - Feb-12
  - Mar-12
  - Apr-12
  - May-12
  - Jun-12
  - Jul-12
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Revision and amendment of international L-category vehicle approval in the area of environmental and propulsion performance requirements: Roadmap.
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<tr>
<th>L-category vehicle type approval of emissions</th>
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<tr>
<td><strong>International harmonisation of L-category vehicle classification (Task 4.10)</strong></td>
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<tr>
<td><strong>Propulsion performance requirements (Task 4.9)</strong></td>
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<tr>
<td><strong>Test Type I, tailpipe emissions test after cold start; Test Type II, tailpipe emissions test at (increased) idle / free acceleration test; Test Type III, emission test of crankcase gases; Test Type VII, measurement of CO2 emissions, fuel consumption, electric energy consumption and electric range determination; (tasks 4.2, 4.3, 4.4, 4.7)</strong></td>
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<td><strong>Test Type V, durability testing of pollution control devices (Task 4.6)</strong></td>
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<td><strong>Test Type IV, evaporative emissions test (Task 4.5)</strong></td>
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<tr>
<td><strong>Test Type VIII, on-board diagnostics test (environmental part only of OBD) (Task 4.8)</strong></td>
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**Test Process**

- **Select Category**
  - **Masses, dimensions and number of wheels. Design maximum speed and propulsive power**

**Vehicle**

- **Propulsion performance performed on different engine(s)/motor(s)**
- **Test Types I, II, III, VII performed on the same vehicle(s)?**
- **Test Types V, IV, and VIII performed on the same vehicle(s)?**

**Details**

- **EU Codecision Act Annex I, REPRR**
- **UN RE3**
- **EU Directive 2002/24/EC**
- **JPN and USA legislation**
- **Other regional legislation**
- **GTR No. 2**

- **Proposal to revise classification criteria**
  - **Update UN RE3 and S. R. 1**
  - **Proposal to revise classification criteria**

- **Moped issue**
  - **Maximum vehicle speed**
  - **Addition of Enduro and Trail variants of 135-A1/2/3**
  - **ATV, S65**
  - **Power, weight limits**

- **Motorcycle issue**
  - **Addition of Enduro and Trail variants of 135-A1/2/3**

- **Quadricycle issue**
  - **Sub categories**
  - **ATV, S65**
  - **Power, weight limits**

- **Issue**
  - **Not all vehicles covered**
  - **Alternative drives**

- **Issue**
  - **Harmonising test methods**
  - **Harmonising cycle between regions**
  - **Open scope of R101 or consolidate**

- **Issue**
  - **Type VII issue specific of the tests**

- **Issue**
  - **Rectifying any issues with the specifics of the tests**

- **Issue**
  - **Non-open standards?**
  - **Categories to cover?**
  - **Separation of environmental and functional on-board diagnostics**

- **Issue**
  - **Separation of OBD Stage I (similar to US comprehensive components) and Stage II, emission verification?**

- **Issue**
  - **Which UN agreement to use: 1958 or 1998?**

- **US EPA AMA cycle EC SRC LeCv**
- **US EPA permeation test US CARB SHED test**
- **Transfer both into UN regulation**
- **US REPRR US CF Title 40 part 86**
- **EU REPRR US CF Title 40 part 86**
- **EU RVCR UN RE3**
- **International standards**

**Test Types**

- **Type I**
  - **Emissions**
  - **Fuel consumption**
  - **Cold**
  - **Not performed as low occurrence**

- **Type II**
  - **Idle**

- **Type III**
  - **Crankcase**

- **Type IV**
  - **Test performance EC, E, Hybrid**
  - **Max power, max torque**
  - **Max vehicle speed**

- **Type V**
  - **Test type**
  - **Uses Type I emission test**

- **Type VI**
  - **Fuel consumption**
  - **Cold**
  - **Not performed as low occurrence**

- **Type VII**
  - **CO2, Fuel consumption, range**
  - **Measure Type I, III & VII in one test**

- **Type VIII**
  - **(Environmental part/ emission test verification)**
  - **Based on RE3 PLUS**
  - **Specifying additional parameters to monitor PLUS**
  - **Standard communication protocol and socket**

**Location for regulation and issues**

- **Test performance**
  - **EC, E, Hybrid**
  - **Max power, max torque**
  - **Max vehicle speed**

- **New and consolidated Regulation 1958 Agreement Regulation and/ or 1998 GTR? OR Update motorcycle power test OR Add to Type I test regulation (when that is chosen)**

- **1558 Agreement Regulation and/ or 1998 GTR? OR Update motorcycle power test OR Add to Type I test regulation (when that is chosen)**

- **Update R40 and/or R47 OR Update GTR No. 2 OR Extend scope of R101 OR New regulation to encompass all**

- **US EPA AMA cycle EC SRC LeCv**
- **US EPA permeation test US CARB SHED test**
- **Transfer both into UN regulation**

- **Based on RE3 PLUS**
  - **Specifying additional parameters to monitor PLUS**
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- **Which UN agreement to use: 1958 or 1998?**
Draft roadmap for tests Type I and II regarding changes to UN Regulation 40, 47, GTR No. 2

1958 agreement route (RWA)

- Proposals:
  - Amendment (3°) UNECE Reg 47 AND Amendment (4°) UNECE Reg 40
  - 1) propose modifications from REPPR
  - 2) expand scope to include:
    - a) L6 R47
    - b) L7 R40

Proposals accepted?

Complete and adopted REPPR

Update categories (MRE3 and MRE1)

Propose changes to GTR No. 2

Proposal to GTR No. 2 (3° Amendment)

Scope
- Expand scope to L1 and L2 vehicles (and L6)

Limits
- 1) introduction of global L1 & L2 emission limits based on TBD limits (EU proposal L1 & L2 Euro 4 limits)
- 2) Replace current principal limit values of gtr No. 2 (including amendment 1 & 2) with Euro 5 (L3 e) limits
- 3) Transfer current principal limit values to alternative limit values.

Amendment (3°) UNECE Reg 47 AND Amendment (4°) UNECE Reg 40

New ‘mirror’ Regulation:

- annex gtr No. 2 (including amendment 1 & 2)

Amendment (3°) UNECE Reg 47 AND Amendment (4°) UNECE Reg 40 OR New ‘mirror’ Regulation:

Revises UNECE Reg 101:
- Widen scope and revise to accommodate testing of L-category vehicles

Next steps to be further developed and agreed upon by informal working group.

1998 agreement route (GTR No. 9)

Adoption changes GTR No. 2 and transpose into:

Revise UNECE Reg 101:
- Widen scope and revise to accommodate testing of L-category vehicles

Next steps to be further developed and agreed upon by informal working group.

Proposal to GTR No. 2 (3° Amendment)

Scope
- Expand scope to L1 and L2 vehicles (and L6)

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Amendment (3°) UNECE Reg 47 AND Amendment (4°) UNECE Reg 40

New ‘mirror’ Regulation:

- annex gtr No. 2 (including amendment 1 & 2)