

## ANNEX IV

### MODEL OF THE MANUFACTURER'S RECORDS FILE AND OF THE CUSTOMER INFORMATION FILE

#### PART I

##### Vehicle CO<sub>2</sub> emissions and fuel consumption – Manufacturer's records file

The manufacturer's records file will be produced by the simulation tool and shall at least contain the following information:

1. Vehicle, component, separate technical unit and systems data
  - 1.1. Vehicle data
    - 1.1.1. Name and address of manufacturer
    - 1.1.2. Vehicle model
    - 1.1.3. Vehicle identification number (VIN) ...
    - 1.1.4. Vehicle category (N1 N2, N3, M1, M2, M3) ...
    - 1.1.5. Axle configuration ...
    - 1.1.6. Max. gross vehicle weight (t) ...
    - 1.1.7. Vehicle group in accordance with Table 1 ...
    - 1.1.8. Corrected actual curb mass (kg) ...
  - 1.2. Main engine specifications
    - 1.2.1. Engine model
    - 1.2.2. Engine certification number ...
    - 1.2.3. Engine rated power (kW) ...
    - 1.2.4. Engine idling speed (1/min) ...
    - 1.2.5. Engine rated speed (1/min) ...
    - 1.2.6. Engine capacity (ltr) ...
    - 1.2.7. Engine reference fuel type (diesel/LPG/CNG ...) ...
    - 1.2.8. Hash of the fuel map file/document ...
  - 1.3. Main transmission specifications
    - 1.3.1. Transmission model
    - 1.3.2. Transmission certification number ...
    - 1.3.3. Main option used for generation of loss maps (Option1/Option2/Option3/Standard values) ...:
    - 1.3.4. Transmission type (SMT, AMT, APT-S, APT-P) ...

- 1.3.5. Nr. of gears ...
- 1.3.6. Transmission ratio final gear ...
- 1.3.7. Retarder type ...
- 1.3.8. Power take off (yes/no) ...
- 1.3.9. Hash of the efficiency map file/document ...
- 1.4. Retarder specifications
  - 1.4.1. Retarder model
  - 1.4.2. Retarder certification number ...
  - 1.4.3. Certification option used for generation of a loss map (standard values/measurement) ...
  - 1.4.4. Hash of the efficiency map file/document ...
- 1.5. Torque converter specification
  - 1.5.1. Torque converter model
  - 1.5.2. Torque converter certification number ...
  - 1.5.3. Certification option used for generation of a loss map (standard values/measurement) ...
  - 1.5.4. Hash of the efficiency map file/document ...
- 1.6. Angle drive specifications
  - 1.6.1. Angle drive model
  - 1.6.2. Axle certification number ...
  - 1.6.3. Certification option used for generation of a loss map (standard values/measurement) ...
  - 1.6.4. Angle drive ratio ...
  - 1.6.5. Hash of the efficiency map file/document ...
- 1.7. Axle specifications
  - 1.7.1. Axle model ...
  - 1.7.2. Axle certification number ...
  - 1.7.3. Certification option used for generation of a loss map (standard values/measurement) ...
  - 1.7.4. Axle type (e.g. standard single driven axle) ...
  - 1.7.5. Axle ratio ...
  - 1.7.6. Hash of the efficiency map file/document ...
- 1.8. Aerodynamics

- 1.8.1. Model
- 1.8.2. Certification option used for generation of CdxA (standard values /measurement) ...
- 1.8.3. CdxA Certification number (if applicable) ...
- 1.8.4. CdxA value ...
- 1.8.5. Hash of the efficiency map file/document ...
- 1.9. Main tyre specifications
  - 1.9.1. Tyre dimension axle 1 ...
  - 1.9.2. Tyre certification number ...
  - 1.9.3. Specific RRC of all tyres on axle 1 ...
  - 1.9.4. Tyre dimension axle 2 ...
  - 1.9.5. Twin axle (yes/no) axle 2 ...
  - 1.9.6. Tyre certification number ...
  - 1.9.7. Specific RRC of all tyres on axle 2 ...
  - 1.9.8. Tyre dimension axle 3 ...
  - 1.9.9. Twin axle (yes/no) axle 3 ...
  - 1.9.10. Tyre certification number ...
  - 1.9.11. Specific RRC of all tyres on axle 3 ...
  - 1.9.12. Tyre dimension axle 4 ...
  - 1.9.13. Twin axle (yes/no) axle 4 ...
  - 1.9.14. Tyre certification number ...
  - 1.9.15. Specific RRC of all tyres on axle 4 ...
- 1.10. Main auxiliary specifications
  - 1.10.1. Engine cooling fan technology ...
  - 1.10.2. Steering pump technology ...
  - 1.10.3. Electric system technology ...
  - 1.10.4. Pneumatic system technology ...
- 1.11. Engine torque limitations
  - 1.11.1. Engine torque limit at gear 1 (% of max engine torque) ...
  - 1.11.2. Engine torque limit at gear 2 (% of max engine torque) ...
  - 1.11.3. Engine torque limit at gear 3 (% of max engine torque) ...
  - 1.11.4. Engine torque limit at gear ... (% of max engine torque)

2. Mission profile and loading dependent values
  - 2.1. Simulation parameters (for each profile/load/fuel combination)
    - 2.1.1. Mission profile (long haul/regional/urban/municipal/construction) ...
    - 2.1.2. Load (as defined in the simulation tool) (kg) ...
    - 2.1.3. Fuel (diesel/petrol/LPG/CNG/...) ...
    - 2.1.4. Total vehicle mass in simulation (kg) ...
  - 2.2. Vehicle driving performance and information for simulation quality check
    - 2.2.1. Average speed (km/h) ...
    - 2.2.2. Minimum instantaneous speed (km/h) ...
    - 2.2.3. Maximum instantaneous speed (km/h) ...
    - 2.2.4. Maximum deceleration ( $\text{m/s}^2$ ) ...
    - 2.2.5. Maximum acceleration ( $\text{m/s}^2$ ) ...
    - 2.2.6. Full load percentage on driving time ...
    - 2.2.7. Total number of gear shifts ...
    - 2.2.8. Total driven distance (km) ...
  - 2.3. Fuel and CO<sub>2</sub> results
    - 2.3.1. Fuel consumption (g/km) ...
    - 2.3.2. Fuel consumption (g/t-km) ...
    - 2.3.3. Fuel consumption (g/p-km) ...
    - 2.3.4. Fuel consumption ( $\text{g/m}^3\text{-km}$ ) ...
    - 2.3.5. Fuel consumption (l/100km) ...
    - 2.3.6. Fuel consumption (l/t-km) ...
    - 2.3.7. Fuel consumption (l/p-km) ...
    - 2.3.8. Fuel consumption ( $\text{l/m}^3\text{-km}$ ) ...
    - 2.3.9. Fuel consumption (MJ/km) ...
    - 2.3.10. Fuel consumption (MJ/t-km) ...
    - 2.3.11. Fuel consumption (MJ/p-km) ...
    - 2.3.12. Fuel consumption ( $\text{MJ/m}^3\text{-km}$ ) ...
    - 2.3.13. CO<sub>2</sub> (g/km) ...
    - 2.3.14. CO<sub>2</sub> (g/t-km) ...
    - 2.3.15. CO<sub>2</sub> (g/p-km) ...

2.3.16. CO<sub>2</sub> (g/m<sup>3</sup>-km) ...

3. Software and user information

3.1. Software and user information

3.1.1. Simulation tool version (X.X.X) ...

3.1.2. Date and time of the simulation

3.1.3. Hash of simulation tool input information and input data ...

3.1.4. Hash of simulation tool result ...