



**Economic and Social  
Council**

Distr.  
GENERAL

ECE/TRANS/SC.1/2009/2  
4 August 2009

Original: ENGLISH

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**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

Working Party on Road Transport

One-hundred-and-fourth session  
Geneva, 19-21 October 2009  
Item 5 (a) (ii) of the provisional agenda

**ROAD TRANSPORT INFRASTRUCTURE**

European Agreement on Main International Traffic Arteries (AGR)

Consideration of new proposals for amendments to the AGR

Note by the secretariat

1. At its one-hundredth session (2006) the Working Party on Road Transport (SC.1) considered possible amendments to the European Agreement on Main International Traffic Arteries (AGR) based on document TRANS/SC.1/2005/5 submitted by France. It was decided to postpone discussions about the issue of road safety audits and inspections, and their possible inclusion in AGR in the form of an amendment, until the European Parliament and the Council of the European Union (EU) deliver a Directive on that subject (ECE/TRANS/SC.1/379).
2. Directive 2008/96/EC on road infrastructure safety management was delivered on 18 November 2008. Taking into account that twenty of the EU member States are also Contracting Parties to AGR and the need for harmonization between national legislations at UNECE level, the secretariat prepared the present document, the purpose of which is to re-launch discussion in SC.1 about the issue of road safety audits and inspections, and the possible amendments to AGR.

## **I. Objectives of Directive 2008/96/EC**

3. In the EU the trans-European road network is of paramount importance in supporting integration, cohesion and a high level of well-being. An important part of these objectives involves road safety. The European Commission (EC) already expressed a need to carry out road safety audits with the intention to identify and manage high accident concentration sections within the EU, as well as to reduce the number of deaths on the roads in the EU.<sup>1</sup>

4. The objective of Directive 2008/96/EC is the establishment and implementation by the EU member States of procedures that would ensure consistently high levels of road safety throughout the trans-European road network. These procedures relate to road safety impact assessments, road safety audits, the management of road network safety, as well as safety inspections by the EU member States.

5. The Directive applies to roads which are part of the trans-European road network, whether they are at the design stage, under construction or in operation, but member States may also apply the provisions of this Directive, as a set of good practices, to national road transport infrastructure. The Directive contains a series of safety-related definitions such as:

- (a) 'road safety impact assessment' means a strategic comparative analysis of the impact of a new road or a substantial modification to the existing network on the safety performance of the road network;
- (b) 'road safety audit' means an independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure project and covering all stages from planning to early operation;
- (c) 'ranking of high accident concentration sections' means a method to identify, analyse and rank sections of the road network which have been in operation for more than three years and upon which a large number of fatal accidents in proportion to the traffic flow have occurred;
- (d) 'network safety ranking' means a method for identifying, analysing and classifying parts of the existing road network according to their potential for safety development and accident cost savings;
- (e) 'safety inspection' means an ordinary periodical verification of the characteristics and defects that require maintenance work for reasons of safety;
- (f) 'infrastructure project' means a project for the construction of new road infrastructure or a substantial modification to the existing network which affects the traffic flow.

6. As far as the procedures' criteria are concerned, they are listed in the annexes to the Directive, which are reproduced as such in the present document: road safety impact assessment

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<sup>1</sup> In its Communication of 2 June 2003 'European Road Safety Action Programme, Halving the number of road accident victims in the European Union by 2010: A shared responsibility' the European Commission identified road infrastructure as the third pillar of road safety policy.

in annex I, road safety audit in annex II, and ranking of high accident concentration sections and network safety ranking in annex III.

7. Other essential provisions of the Directive are that :
- (a) It requests member States to ensure safety inspections of roads in operation to identify the road safety related features and prevent accidents;
  - (b) Concerning data management, it requests member States to ensure that for each fatal accident occurring on a road subject to the Directive an accident report is drawn up, including each of the elements listed in annex IV;
  - (c) Member States shall calculate the average social cost of a fatal accident and the average social cost of a severe accident occurring in its territory;
  - (d) Member States shall ensure that, if they do not already exist, training curricula for road safety auditors are adopted by 19 December 2011. Member States shall ensure that where road safety auditors carry out functions under this Directive, they undergo an initial training, awarded by a certificate of competence, and take part in further periodic training courses;
  - (e) It requests members States to carry out reviews at least every three years and identify and rank high accident concentration sections. A remedial action is requested for such sections which includes repairs and warning signs visible in all weather conditions, during both day and night time.

## **II. Possible solutions for amending AGR**

8. Taking into account the developments in the EU, as well as previous discussion in its meetings, the Working Party should consider amending the AGR so as to include procedures relating to road safety impact assessments, road safety audits, the management of road network safety, as well as safety inspections.

9. SC.1 may wish to decide starting the amendment process; should this be the case, the three strategies recommended by the 20th session of the ad hoc meeting on the implementation of the AGR (ECE/TRANS/SC.1/AC.5/40) remain valid, as follows:

- (a) Add road safety audits to the AGR either by modifying Annex II or creating a new Annex. [...] it was felt that, if the AGR was to be modified, a new Annex might be more appropriate;
- (b) Create a new legal instrument with broader scope given that road safety audits and inspections are important for all roads and not just E-roads;
- (c) Start preparing a Resolution to be adopted by SC.1. This approach might offer more flexibility and could go into greater detail.

10. Taking into account the tight link between road traffic safety and road safety procedures for infrastructure projects the SC.1 may wish to consider organizing a joint meeting with the UNECE Working Party on Road Traffic Safety (WP.1) in 2010.

Annex I

**Road safety impact assessment for infrastructure projects**

1. Elements of a road safety impact assessment:
  - (a) problem definition;
  - (b) current situation and 'do nothing' scenario;
  - (c) road safety objectives;
  - (d) analysis of impacts on road safety of the proposed alternatives;
  - (e) comparison of the alternatives, including cost-benefit analysis;
  - (f) presentation of the range of possible solutions.
  
2. Elements to be taken into account:
  - (a) fatalities and accidents, reduction targets against 'do nothing' scenario;
  - (b) route choice and traffic patterns;
  - (c) possible effects on the existing networks (e.g. exits, intersections, level crossings);
  - (d) road users, including vulnerable users (e.g. pedestrians, cyclists, motorcyclists);
  - (e) traffic (e.g. traffic volume, traffic categorisation by type);
  - (f) seasonal and climatic conditions;
  - (g) presence of a sufficient number of safe parking areas;
  - (h) seismic activity.

Annex II**Road safety audits for infrastructure projects**

1. Criteria at the draft design stage:
  - (a) geographical location (e.g. exposure to landslides, flooding, avalanches), seasonal and climatic conditions and seismic activity;
  - (b) types of and distance between junctions;
  - (c) number and type of lanes;
  - (d) kinds of traffic admissible to the new road;
  - (e) functionality of the road in the network;
  - (f) meteorological conditions;
  - (g) driving speeds;
  - (h) cross-sections (e.g. width of carriageway, cycle tracks, foot paths);
  - (i) horizontal and vertical alignments;
  - (j) visibility;
  - (k) junctions layout;
  - (l) public transport and infrastructures;
  - (m) road/rail level crossings.
  
2. Criteria for the detailed design stage:
  - (a) layout;
  - (b) coherent road signs and markings;
  - (c) lighting of lit roads and intersections;
  - (d) roadside equipment;
  - (e) roadside environment including vegetation;
  - (f) fixed obstacles at the roadside;
  - (g) provision of safe parking areas;
  - (h) vulnerable road users (e.g. pedestrians, cyclists, motorcyclists);
  - (i) user-friendly adaptation of road restraint systems (central reservations and crash barriers to prevent hazards to vulnerable users).
  
3. Criteria for the pre-opening stage:
  - (a) safety of road users and visibility under different conditions such as darkness and under normal weather conditions;
  - (b) readability of road signs and markings;
  - (c) condition of pavement.
  
4. Criteria for early operation: assessment of road safety in the light of actual behaviour of users. Audits at any stage may involve the need to reconsider criteria from previous stages.

Annex III

**Ranking of high accident concentration sections and network safety ranking**

1. Identification of road sections with a high accident concentration

The identification of road sections with a high accident concentration takes into account at least the number of fatal accidents that have occurred in previous years per unit of road length in relation to the volume of traffic and, in case of intersections, the number of such accidents per location of intersections.

2. Identification of sections for analysis in network safety ranking

The identification of sections for analysis in network safety ranking takes into account their potential savings in accident costs. Road sections shall be classified into categories. For each category of roads, road sections shall be analyzed and ranked according to safety-related factors, such as accidents concentration, traffic volume and traffic typology.

For each road category, network safety ranking shall result in a priority list of road sections where an improvement of the infrastructure is expected to be highly effective.

3. Elements of evaluation for expert teams' site visits:

- (a) a description of the road section;
- (b) a reference to possible previous reports on the same road section;
- (c) the analysis of possible accident reports;
- (d) the number of accidents, of fatalities and of severely injured persons in the three previous years;
- (e) a set of potential remedial measures for realization within different timescales considering for example:
  - (i) removing or protecting fixed roadside obstacles;
  - (ii) reducing speed limits and intensifying local speed enforcement;
  - (iii) improving visibility under different weather and light conditions;
  - (iv) improving safety condition of roadside equipment such as road restraint systems;
  - (v) improving coherence, visibility, readability and position of road markings (incl. application of rumble strips), signs and signals;
  - (vi) protecting against rocks falling, landslips and avalanches;
  - (vii) improving grip/roughness of pavements;
  - (viii) redesigning road restraint systems;
  - (ix) providing and improving median protection;

- (x) changing the overtaking layout;
- (xi) improving junctions, including road/rail level crossings;
- (xii) changing the alignment;
- (xiii) changing width of road, adding hard shoulders;
- (xiv) installing traffic management and control systems;
- (xv) reducing potential conflict with vulnerable road users;
- (xvi) upgrading the road to current design standards;
- (xvii) restoring or replacing pavements;
- (xviii) using intelligent road signs;
- (xix) improving intelligent transport systems and telematics services for interoperability, emergency and signage purposes.

Annex IV

**Accident information contained in accident reports**

Accident reports include the following elements:

1. The Accident location, as precise as possible;
2. Pictures and/or diagrams of the accident site;
3. Date and hour of accident;
4. Information on the road such as area type, road type, junction type incl. signaling, number of lanes, markings, road surface, lighting and weather conditions, speed limit, roadside obstacles;
5. Accident severity, including number of fatalities and injured persons, if possible according to common criteria to be defined in accordance with the regulatory procedure with scrutiny referred to in Article 13(3);
6. Characteristics of the persons involved such as age, sex, nationality, alcohol level, use of safety equipment or not;
7. Data on the vehicles involved (type, age, country, safety equipment if any, date of last periodical technical check according to applicable legislation);
8. Accident data such as accident type, collision type, vehicle and driver manoeuvre;
9. Whenever possible, information on the time elapsed between the time of the accident and the recording of the accident, or the arrival of the emergency services.

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