

DRAFT**WP4. PROVOKING OF FASTER DEVELOPMENT OF LEGISLATION, STANDARDS AND GUIDELINES**

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1. LEGISLATION

The highest rules for road keeping are given in legislation decreed by the Parliament, These are e.g.

- Road Act
- Land use and construction law

Above mentioned laws do not include any technical details. E-street Project can not affect legislation.

(If there are different needs or opinions in participating countries please inform WP4)

2. RECOMMENDATIONS**2.1 CIE**

The best known organisation preparing international recommendation is CIE.

In the field of adaptive road lighting the most important report is CIE 115-1995 "Recommendation for the lighting of roads for motor and pedestrian traffic". This document specifies fixed values for lighting parameters.

Report CIE 115-1995 is under revision, Technical Committee TC 4-44 will revise the publication in such a way that lighting performance requirements may vary depending on actual status of environmental and traffic conditions.

Final draft will be considered in the meeting of Division 4 in Beijing, July 2007. It is expected that divisional and Board ballot will be conducted and the report published by the end of this year.

2.2 CEN

The document CEN/TR13201-1:2004 "Road lighting Part 1: Selection of lighting classes" has been prepared by Technical Committee CEN/TC 169 "Light and Lighting". This informative document specifies the lighting classes set out in the standard EN13201-2 and gives guidelines on the application of these classes.

This document should be revised in accordance with the revised report CIE115:2007. Selection of lighting class can not be standardised because the subject is depending of national lighting and traffic safety policy as well as financial possibilities and allocation.

The Finnish delegate in CEN/TC 169 is provided with proposal and relevant material to be forwarded to CEN/TC secretariat.

3. STANDARDS

3.1 ISO

In accordance with the agreement between CIE and ISO, CIE will prepare worldwide standards on behalf of ISO.

When the report CIE 115 is approved and published CIE CB will negotiate about the possible ISO standard.

3.2 CEN

There are already European road lighting standards which have been worked out by the Joint Working Group of CEN/TC 169 "Light and Lighting" and CEN/TC 226 "Road Equipment". They are as follows:

- EN 13201-2: 2003-Part 2: Performance requirements

This part of this European Standard defines, according to photometric requirements, lighting classes for road lighting aiming at the visual needs of road users, and it considers environmental aspects of road lighting.

Lighting parameters are defined with fixed values.

- EN 13201-3:2003-Part 3: Calculation of performance

The calculation methods described in this part enable road lighting quality characteristics to be calculated by agreed procedures so that results obtained from different sources will have uniform basis.

- EN 13201-4:2003-Part 4: Methods of measuring lighting performance

This part of standard specifies the procedures for making photometric and related measurements of road lighting installations. Examples are given of the form of test report.

These standards should be reviewed and revised, especially Part 2, in accordance with the revised report CIE 115. Cf 2.1.

The Finnish delegate in CEN/TC226 is provided with proposal and relevant material to be forwarded to CEN/TC secretariat. Next meeting of TC 226 will be organised in 14.-15.6.2007 in Norway.

4. GUIDELINES

Guidelines are usually worked out on the national level. Typical content of different documents may be e.g. as follows.

4.1 National lighting policy

Document gives general rules:

- Owner of road lighting
 - Construction of a new road lighting
 - Need of road lighting
 - Rehabilitation of an obsolete road lighting
 - Maintenance of road lighting
- Conditions for dimming, night-time switching off and adaptive lighting will be given in this chapter.

4.2 National code of practice for road lighting

This document includes usually coherent guidelines for the practical planning and design work. A typical content may be e.g. as follows.

1. Need of lighting

One of paragraphs describes the aim and function of the adaptive road lighting.

2. Performance requirements

Paragraph "Selection of lighting class" includes instructions how luminance can vary depending on traffic volume and road conditions in accordance with the functional and quality requirements presented in the final engineering.

3. Public roads on rural areas

4. Roads and streets on urban areas

5. Tunnels

6. Planning and design

Paragraph "Electricity systems" includes instructions for the intelligent control of the adaptive road lighting.

7. Lighting plans

7.1 Feasibility study

- profitability of adaptive lighting
- areas and road sections to be maintained under different level of intelligent control

7.2 Preliminary engineering

- principles of installation and control

7.3 Final engineering

Paragraph "Special specifications" describes among others for the intelligent control functional and quality requirements, equipment and components, control properties, software's, tests etc.

8. Procurements

- Conventional method: separate design, construction and maintenance

- Total contract including design
- LCC method which includes financing, design, construction and maintenance

5. HIGHWAY AUTHORITIES

5.1 Conference of European Directors of Roads

This conference, CEDR, is a permanent coordination group of General Directors of National Highway Administrations. It has a special group for development "Technical Group Standardisation", TGS.

The Finnish representative is provided with proposal and relevant material. He will present the item in the meeting of TGS how to proceed in this matter.

5.2 (Any others ?)

6. PRESENTATION

6.1 Fudan University, Shanghai
PROMILL Lecture and Training Course 11-12-4.2006
Pentti Hautala
"Intelligent road lighting"

6.2 Co-operation group UV7

UV7 is a co-operation group between six biggest city electricity companies and the Finnish National Highway Administration.

General presentation and information of E-Street project in Espoo, Finland 16.5.2006 by Pentti Hautala.

6.3 International Conference Urban Nightscape 2006, 21.-23.9.2006 Athens

Presented paper:

Henri Juslen, Pentti Hautala et al:
"Experiences of the intelligent road lighting".

6.4 Meeting of General Assembly of CIE, Beijing 4.7.2007.

Item 10. Lighting and energy. Presentation by the Finnish Delegation, includes also results of CIE/TC4-44. Revision of report CIE 115.

6.5 Transport Research Arena, Europe 2008.

Submitted abstract by Pentti Hautala. "ADAPTIVE ROAD LIGHTING IN EUROPE. Development of standards and guidelines.

