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Working Party on Road Traffic Safety

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Item 5 (a) of the provisional agenda

CONVENTION ON ROAD SIGNS AND SIGNALS, 1968

Mandate of the Ad hoc Group of Experts on Variable Message Signs

Note by the secretariat

1. At its fifty-eighth session the Working Party decided to establish an ad-hoc group of experts to deal with Intelligent Transport Systems (ITS) of relevance to WP.1 and notably with Variable Message Signs (VMS). The mandate of this group will be considered and possibly approved at the fifty-ninth session of WP.1 (ECE/TRANS/WP.1/125, para. 52).

2. The present document contains a proposal of mandate which is based on a draft sent by the Government of Spain and elaborated by the Small Group on VMS. The Working Party is expected to consider and possibly approve it.

3. The main reasons that led to the decision to create this group are as follows: road information is a flexible tool to solve main mobility and safety problems and, hence, it plays an essential role all over the world. The place where road signs can be inscribed or displayed is changing quickly and drastically, and road markings and posted signs can no longer be considered the only places where to show road information.

4. In the last 30 years electronic means have been gaining importance very fast. Initially VMS were the main type of electronic signing, but this is no longer the case: in-car navigators, e.g. (TOM-TOM) or (Garmin), in-car displays, e.g. On Board Units (OBU) and nomadic devices (mobile phones, navigators, (PDA)), as well as the Internet are gaining importance. The use of

road signing is changing accordingly: from permanent to temporary states, from static to variable but ubiquitous, from uni-dimensional (one sign to one fixed support) to multidimensional (different supports display many different signs). These developments must be included in the work of WP.1 and reflected in the relevant road safety legal instruments of the United Nations.

5. For easy reference, the name of the ad-hoc group of experts on ITS of relevance to WP.1 and in particular VMS shall be referred to as "the VMS Unit". This Unit evolves from its predecessor, WP.1's Small Group on VMS, and incorporates a decade of experience of European cooperation on different projects dealing with VMS harmonization. Participation in the VMS Unit is open to all United Nations member States.

6. The VMS Unit will act within the framework of the Terms of Reference of the WP.1 to "initiate and pursue actions aimed at reinforcing and improving road safety, developing and harmonizing traffic regulations and rules for road signs and signals while also taking account notably of the environment, and strengthening relations between countries".

7. More specifically, the VMS Unit will propose amendments to the Convention on Road Signs and Signals, 1968, to take into account new technologies and ensure cohesion on the road displays whatever the signing domain, particularly between posted and electronic signs (shapes, design principles, contents).

8. As a first step, the VMS Unit will propose a fundamental structure for road signs as a new platform for present and future work[1]. Once the consensus is reached on this fundamental structure, the VMS Unit will propose a programme for gradually filling in the different signing gaps.

9. The initial main references for the work of the VMS Unit will be:

(a) Previous work done by the Small Group on VMS (2003-2008)

(b) Task 09 of the Conference of European Directors of Roads (CEDR): Report on VMS usage in Europe (2009)

(c) Work currently being done by ES4 (ES4-Mare Nostrum Guidelines, 2009)

(d) ESoP (European Statement of principles on Human Machine interaction, 2007)

(e) ISO standards specifically concerning road information displays.

10. A preliminary timing of the work of VMS Unit is proposed as follows:

(a) March-April 2010: the VMS Unit presents its workplan in the fifty-ninth session of WP.1 based on two possible lines of work, either (a) working as if electronic signs where a subset of posted signs (present case) or (b) working considering that electronic

[1] The preliminary proposals received from the Small Group on VMS are reproduced in the Annex to the present document.

signs are a complementary yet different set to posted signs (expected case). WP.1 decides on the proposal;

(b) April-September 2010: Members of the VMS Unit work according to the workplan accepted, reviewing the achievable goals concerning the reference documents. Preparation of draft document;

(c) September-October 2010: draft proposal and revision of work done by the VMS Unit is presented to the sixtieth session of WP.1. WP.1 decides on VMS Unit proposals and achievements;

(d) November 2010-March 2011: preparation of a first set of proposals;

(e) March 2011: official document is submitted for consideration and possible approval at the sixty-first session of WP.1.

11. The VMS Unit shall meet whenever needed; however, meetings at the UNECE premises in Geneva will depend on the availability of facilities (meeting rooms and equipment, etc). As a rule, meetings shall take place in English only. However, the documents produced by the VMS Unit will be translated in the three official languages.

12. The VMS Unit reports to the Working Party on Road Traffic Safety.

Annex

Preliminary proposals by the Small Group on VMS

I. Way forward: proposing a progressive scenario

1. In this document, the VMS Unit proposes to WP.1 the restructuring of the 1968 Convention according to this fundamental division:

(a) Road markings

(b) Posted signs

(c) Electronic signs

2. The idea of this proposal is that we need controlled change in order to keep cohesion on the road displays whatever the signing domain, particularly between posted and electronic signs (shapes, design principles, contents). As it was made evident for the case of VMS and the heterogeneity of usage spreading though different European administrations, nowadays the danger is that competing industries and marketing interests take the field of road signing as particular branding elements (more fashionable, aesthetic, etc.).

3. Electronic signing would, in principle, concern the following devices:

(a) Traffic lights

(b) Traffic signals

(c) VMS

(d) In-vehicle devices (On Board Units, navigators, nomadic devices).

(e) Internet, road kiosks, etc. (Off-the-road but public-official screens).

4. The idea is to reach consensus about this fundamental structure for road signs as a new platform for present and future work. Then a program should be arranged and agreed, in order to fill in the different signing gaps progressively on due time. This means: (a) reform following a stepwise basis, and (b) consider main issues, main pictograms, elevate proposals, etc.

II. An overview of reasons for a triple axis on the 1968 Convention

5. Full matrix VMS as an easy transfer platform of design: many VMS devices are currently full matrix: practically any type of signs, pictograms or combination of signs can be displayed there, and in different sizes. That means that current trends on VMS harmonization concerning full matrix VMS constitute a highly useful design transfer to oncoming in-car displays (also full matrix displays). In this way in-vehicle displays concerning road signage do not necessarily need to be re-thought completely.

6. Posted signs vs. electronic signs-visual parameters: posted signs are painted signs, using designs that are “continuous”. Perceptual properties (relative effects of sizes of signs and the interaction with the environment) vary accordingly. Painted signs make the case of proportional signs (scale) easier and, normally, display surfaces are standard (shapes and boards). Electronic-

matrix signs (prism, bulbs, LED) work normally with differing pixel matrix resolutions (32x32, 48x48, 64x64). The easy conversion of designs require design adaptations (vectorial signs) that should be standard and available at WP.1.

7. Posted signs vs. electronic signs-design parameters: electronic signs follow the same design principles as posted signs. However, electronic signs can be used in many places and under many circumstances not even previously thought for posted signs. Electronic signs, composed by pictograms and alphanumeric characters need new abstract characters in order to preserve the supra-linguistic essence of road signage.

8. Posted signs vs. electronic signs-differing comprehension: the meaning of posted signs is not necessarily equivalent to the meaning of electronic signing. Take the sign A,5 “Swing bridge”. As posted sign it means “Warning of a swing bridge”: we approach one moving bridge that can be open or closed. As VMS it means that we are approaching one moving bridge that is currently opened and cannot be crossed!

9. Posted signs vs. electronic signs-need for harmonization: the need to consider and integrate different types of signs according to display devices is clear when envisaging present and future situations. For example, we know how to display speed recommendation on posted signs, and last RE.2 (Jan. 2009) indicates that such signs can be used on VMS. Let us suppose that nothing is said concerning speed recommendation and OBU. Shall other signs formats, shapes be displayed then? Obviously, the reasonable way forward is to use the standard recommendation for posted signs and VMS. A simple sentence indicating the need to keep these formats when displaying speed recommendation in-vehicle would help to share signing standards and to gain preeminence.

10. Some possible working issues can be advanced: (a) Improvement, and possible extension, of VMS part present on the RE.2; (b) Proposal for priority rules fixed/VMS; (c) Proposal for new chapter “lane control” taking this out of the traffic lights chapter; (d) Reconsideration of rules for “flashing lights”; (e) Proposals for full matrix designs for VMS displays; (f) Proposal for signs use continuity in in-car and internet applications.

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