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## **Simplification of UN Lighting and Light-Signalling Regulations**

The GTB Opinion

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For unrestricted release

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## I. EXECUTIVE SUMMARY

The International Automotive Lighting and Light-Signalling Expert Group (GTB) is a longstanding contributor to the work of the UNECE World Forum for Harmonization of Vehicle Regulations (WP29) and its working party (GRE). Recently, concerns have been expressed at WP29 about the administrative burden associated with the frequent amendments to the lighting and light signalling regulations. GRE has been mandated to study ways of simplifying the regulations and moving toward less technology-specific, more performance-related requirements. GTB, as a major stakeholder in the process, has studied the feasibility of the approach and has reached the following conclusions:

- a) The work of GRE differs from that of the other GR's reporting to WP29 because of the particular nature of vehicle lighting and light signalling, which is interacting directly with the driver and other traffic users. Vehicle lighting and light signalling is subject to rapid technological innovation and promotes vehicle sales resulting from its perceived safety benefit and due to it forming an intimate feature of the vehicle style. GRE is also responsible for managing the largest proportion (41 of 131) of the UN regulations that includes the first Regulations; Nos.1 and 2.
- b) The frequent need to amend the regulations, either to ensure correct interpretation of the provisions by the type approval authorities and manufacturers or to align to technical progress, results in a major administrative task for the UNECE secretariat and for the European Union. Additionally, for the users of the regulations and the UN website, the frequent amendment of the regulations increases the difficulty of determining the actual status of the regulation and to follow the evolution of the amendments through the GRE and WP29 processes and subsequent legal procedures.
- c) Action to reduce the administrative burden associated with the collective amendments should be a first priority. This can be achieved by removing many of the requirements repeated in each of the regulations and moving them to a common reference document such as the Resolution R.E.3. This will be a straightforward task for an editor, as the text will only be physically moved and not changed. The R.E.3 type document is managed directly by WP.29 and so frequent amendments of this single reference document can be more readily administered.
- d) The initial idea to consolidate the existing 41 lighting regulations into a smaller group of new regulations is not feasible in the medium – long term, because it threatens the complex legal basis of the requirements that have been developed over many years. This approach, in addition to creating an unmanageable workload, would result in a major disturbance to the work underway to achieve greater global harmonisation of technical requirements with administrations operating certification systems outside of the UN 1958 agreement.
- e) The desire of WP29 to move toward less technology-specific, more performance-related requirements is not understood in the context of lighting and light-signalling regulations. This item must be debated as a major priority if progress toward simplification of the regulations is to be achieved.
- f) The need to adapt the regulations, to the rapid technological advances of vehicles and their systems, highlights the problem associated with the management of a transparent system to deal with interpretations by type-approval authorities. Frequently these interpretations are not shared or agreed with other authorities and this leads to market distortions, which are currently solved by emergency action to introduce amendments to the regulations. This process also impacts seriously on manufacturers who are not prepared to wait to exploit their innovations until the regulation is ready. The existing system threatens their competitiveness due to the likelihood that a competitor will be able to obtain a type approval, as result of an “inventive” interpretation of the existing provisions in the regulation.

Consequently, an activity is required to identify a new approach to the adaptation of the lighting regulations to technical progress. This is a subject that should be addressed by the GRE Special Interest Group as a condition of working on the simplification of the regulations. This major change to the “modus operandi” of GRE and GTB will require significant resources to elaborate a solution. The establishment of a suitable funding system, such as a Cooperation Programme, to support a research activity involving all stakeholders, should be considered.

## II. INTRODUCTION

The International Automotive Lighting and Light-Signalling Expert Group (GTB) is committed to support the work of the World Forum for Harmonization of Vehicle Regulations (WP29) and its working party (GRE). This is the main focus of GTB that, through its national and international members, gathers the specialist knowledge of vehicle manufacturers, system manufacturers, light source manufacturers, testing laboratories, regulatory groups and academia. For more than 60 years GTB has provided its resources for the development and continuous updating of the 41 UN lighting and light signalling regulations and has recently reorganised its structure to work transparently with GRE to respond to the changing demands upon the UN regulatory system.

At the 156<sup>th</sup> session of WP29 (March 2012) the European Union, supported by Japan, urged WP29 to consider the simplification of the lighting regulations and to focus upon developing less technology-specific, more performance-related requirements. GTB presented an initial response (WP29-157-12) at the 157<sup>th</sup> session in June 2012 and argued that an activity to study the feasibility of simplifying and consolidating the lighting regulations should be undertaken to reduce the administrative workload. Subsequently, at its 158<sup>th</sup> session, WP29 endorsed the principles proposed by GTB and mandated GRE to move forward and focus on performance-oriented requirements. WP.29 invited GRE to develop a road map, taking into consideration the resources of GRE and, at its 69<sup>th</sup> session, GRE agreed to create a Special Interest Group, which is expected to hold its first meeting in February 2014, to define the terms of reference of a new Informal Working Group.

In order to provide its contribution to the GRE Special Interest Group, GTB has studied the feasibility of the approach in the discussion document prepared by the European Commission (GRE-69-14). This GTB position paper is the result of an in-depth study.

## III THE GTB POSITION

1. It is clear that many questions are being raised at WP29 in relation to the work of GRE and the corresponding number of proposals for amendment that are presented for adoption at almost every session of WP29.
2. It should be equally clear that the work of GRE differs from that of the other GR's reporting to WP29 because of the particular characteristics of vehicle lighting and light signalling. In addition to the focus on safety of lighting systems in traffic, for the driver and for other road users, it is clear that good lighting promotes vehicle sales because of its perceived safety benefit and because it is an intimate feature of the vehicle style. The pace of lighting innovation continues to increase as competition between the manufacturers intensifies. This presents a major challenge to maintain the UN regulations in line with technical progress and results in many proposals for amendment. In many cases this technical progress also affects the work of the technical services that also identify requirements that frequently become collective amendments touching the common requirements of the majority of the lighting regulations.

GTB is totally committed to continue to actively and transparently contribute to the work of GRE. Consequently it is important that GTB is involved in any activities to simplify the regulations.

3. GTB understands the basic concern, expressed at WP.29, that the frequent need to amend the regulations, either to ensure correct interpretation of the provisions by the type approval authorities and manufacturers or to align to technical progress, results in administrative problems for the UNECE secretariat and for the European Union. This is particularly the case where frequent collective amendments addressing common parts of many regulations are required. Additionally, for the users of the regulations and the UN website, the frequent amendments increase the difficulty of determining the actual status of the regulation and to follow the evolution of the amendments through the GRE and WP29 processes and legal procedures. Whilst experienced users may be familiar with the UN website, and can navigate through its many sections to find the relevant documents, it is very difficult for new users, and particularly for users in countries that have recently joined the 1958 agreement. GTB believes that any activity to simplify the regulations should include a review of the means of presenting information on the website.

4. GTB believes that action, to reduce the administrative burden associated with the collective amendments, is required to determine a means of simplifying the regulations and wishes to support GRE, to study how common provisions can be moved from the individual regulations into a common reference document. A common reference document could take the form of a Resolution such as the Consolidated Resolution on the Construction of Vehicles (R.E.3). This concept has previously been discussed by GRE, in the form of a “Horizontal Reference Document (HRD)” that would contain the common provisions transferred from the individual regulations. These common items would be deleted from the individual regulations and be replaced by a cross reference to the HRD’s.

The transfer of these common provisions into the HRD should be carried out by a dedicated person as a straightforward editorial task requiring no specific knowledge of lighting requirements. The initial objective should simply be to physically transfer the relevant texts that currently exist in each regulation and move them, without any change, into the HRD. In this way the legal basis of the existing regulations would not be affected and the actual number of amendments to the text would not change. However, the administrative burden associated with maintaining the Resolution document (such as RE.3) would be far less than maintaining all of the current text in the regulations. This should be the first priority for the GRE Informal Group following a confirmation of the legal significance of the R.E.3 versus the Regulations.

5. Although GTB initially proposed the consolidation of the existing 41 lighting regulations into a smaller group of new regulations, it has been concluded that this would not be feasible without causing a massive workload and risking the introduction of errors that would threaten the complex legal basis of the whole system. The 41 regulations have been developed over the last 60 years; they encompass much experience and are the basis for current interpretations that facilitate the granting of type approvals by many administrations. The structure of these regulations and of their technical provisions in particular, has been adopted by administrations that are not signatories to the UN 1958 agreement. To fundamentally change this well accepted structure would create a major setback to the goal of increased international harmonisation; a topic where GTB is well placed to make a positive contribution due to its wide global membership.

The idea of consolidating the regulations into a small number of new regulations was also based on an assumption that the approval markings would be removed from the devices and replaced by entries into the DETA type approvals database. However, even if the 1958 agreement is being amended to include the IWVTA that will depend upon the DETA system for sharing type approval information between the administrations, it is not clear whether all contracting parties will agree to apply the DETA database more generally to allow the markings to be removed.

Whilst GTB considers that the task of creating the HRD is feasible in the short-term and it will certainly relieve a lot of the administrative burden, a completely new approach to the lighting regulations would require a restart of the UN rulemaking process. This would have to start from a certain state of art and technological level. It would be necessary to define an acceptable technical solution to avoid the need to adapt the regulations to the technologies and solutions, which are evolving too quickly for the current regulatory process to be able to respond. In parallel there are two other challenges that are strictly related to the “long term” future of the UNECE system: the IWVTA and the expectation of countries inside the 1998 Agreement “waiting to see” the outcome of revision of the 1958 Agreement.

Maybe this idea of consolidation of the individual regulations into the small group of new regulations will become feasible in the future. However GTB concludes that in the medium-long term this activity should be treated as a low priority.

6. Reference is frequently made at WP29 and GRE to the need for the replacement of “design restrictive” requirements with “performance based requirements”. However, whilst this is a frequently expressed requirement, not only with regard to the UN lighting regulations, it is unclear what is really meant. Before starting to address this requirement it is necessary to define what the base problem is and whether such performance based requirements would be practically achievable under a regulatory system based upon type approval. It should be recalled that, in the USA, NHTSA attempted to develop a performance based approach to its FMVSS108 but has encountered many major hurdles to be overcome even with a system of self certification. For example it is assumed that the introduction of a performance based approach would mean that the need to update the regulations would be avoided when new technologies are introduced, because technology itself is not deemed to be relevant and only performance would be

considered. But this then raises the question of how to prove compliance to performance based requirements. Currently technologies are tested in a specific way because it is more cost effective. GTB is unable to identify how performance based testing could be introduced without imposing a complex and expensive test regime that would offer no practical advantage; even if it may promise a reduction in the perceived administrative workload associated with maintaining the Regulations.

GTB considers that the lighting regulations are already performance based and has difficulty to understand and define how to significantly change the approach. It may be that the demand for less design restrictive regulation may actually disguise a fundamental complaint that the provisions are too “complex” to be understood, followed correctly and translated, without the need for much interpretation. If this is the case GTB is ready to work to determine how these issues can be addressed.

7. Another important consideration, that affects this whole discussion relating to simplification of the lighting regulations, relates to the need to adapt to the rapid technological advances of vehicles and their systems. In some cases it is necessary to adapt the regulations by introducing mandatory requirements for devices or systems whilst, in other cases, it is necessary to introduce provisions that will allow, but control the installation of, optional devices or systems. This activity consumes a lot of time in GTB and GRE to debate, often in much detail, how to restrict or enlarge design opportunities that we clearly have in mind, but which have to be described in detail to avoid any misinterpretations that may occur. Considering that, despite all efforts, proposals for amendments often take several years to enter into force; it is not surprising that manufacturers are not prepared to wait to exploit their innovations until the regulation is ready. There is the real risk of being beaten to market by competitors who have found a type approval authority that will support an “inventive” interpretation of the existing provisions.

This important issue of adaption of the regulations to technical progress is addressed in the UN 1958 agreement and it also forms an important part of the European Union Whole Vehicle Type Approval Regulations. However, whilst these legal instruments are available, the problem of aligning the regulations to technical progress, or establishing acceptable interpretation of the existing provisions, remains a major issue. This impacts upon GTB, GRE and WP29 and threatens the quality of work because frequently a type approval authority will grant an approval based upon an interpretation that is not always shared with, or accepted, by other authorities. The resulting conflict is then left for GRE, and frequently GTB, to resolve under extreme time pressure; mistakes inevitably occur and have to be remedied by further proposals for amendment.

An activity to identify a solution to the adaptation of the lighting regulations to technical progress is required. This is a subject that should be addressed by the GRE Special Interest Group as a condition of working on the simplification of the regulations. It is likely that the “modus operandi” of GRE and, as a consequence, GTB will need to be adapted in order to introduce:

- a) A continuation of the current approach of GTB to propose amendments intended to reduce, where possible, the design restrictive provisions in the regulations to make them more open to technical progress
- b) A system to consider interpretations, adopt and publish them within the structure of GRE without the need to change to legal text in the regulations. In this respect it is foreseen that the GTB Photometry Working Group, that gathers the UN approved technical services and already manages their confidential issues could provide the necessary support with a corresponding change to its terms of reference. This item should be considered in the context of the Proposal for Revision 3 of the 1958 Agreement (ECE/TRANS/WP.29/2014/26 - schedules 6 and 7) that will be discussed at the 162<sup>nd</sup> session of WP.29 in March 2014.

For this approach to work it would be necessary for companies to transparently request interpretations and for administrations to share information in advance, in order to apply interpretations of uniform provisions consistently and fairly. Additionally, as this major change to the “modus operandi” of GRE and GTB will require significant resources to elaborate, the possibility of establishing a suitable funding system, such as a Cooperation Programme, to support a feasibility study involving all stakeholders should be considered.