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## **Justification of JAPAN-OICA on Parking lamp conditions step 1, for the GRE/2022/27**

### **II. Justification**

1. This proposal aims to require that lighting and light-signalling devices be turned on in compliance with the requirements of UN Regulation No. 48 even when a vehicle is under the park condition by adding “park condition” to the scope of UN Regulation No. 48, as is the case with the current provisions for lamps under the normal condition of use of a vehicle.
2. Japan made proposals of ECE/TRANS/WP.29/GRE/2021/2, GRE-84-29 and GRE-84-30 at the 84th GRE and insisted that it would be necessary to formulate regulations for lamps under the park condition. This resulted in the establishment of a Special Interest Group (SIG) on R48-09 as a meeting structure under the GRE. These proposals are reflecting the results of deliberations at the SIG since July 2021. At the 86th GRE, a 2-step approach was approved with Step1 being the establishment of the framework of the regulation of the lamps under the park condition and the regulation of the existing lamps by the Series amendments, and Step 2 being the Supplement amendments that will add upcoming lamps. This proposal proposes the legal text for Step 1, based on the policy decided by the SIG.
3. Japan viewed it as a problem that the lamps not subjected to the provisions under the park condition in the current UN Regulation No. 48 have been put in the market and that it would be difficult to restrict those lamps safely by the Type approval authority under the provisions under the park condition in the current UN Regulation No. 48. This proposal is intended to arrange comprehensively the requirements for the lamps under the park condition and to promote the unified operation and international standard harmonization of UN Regulation No. 48.
4. Meanwhile, to increase user convenience, some manufacturers have produced vehicles with a function that allows lights to flash in conjunction with the locking and unlocking of the doors while a vehicle is under the park condition. We believe that such functions can be permitted to the extent that they do not impair traffic safety.
5. Therefore, we would like to (1) propose prescribing general requirements with a view to clarifying lamps permitted under the park condition and (2) define the “Answer-back [signal]” as lighting and light-signalling functions that assist the user of the vehicle to locate his vehicle by operating in conjunction with the locking or unlocking of the doors, the opening and closing of the doors, the detection of the vehicle user approaching with the key under the park condition.

Paragraph 2.4.1. and subsequent renumbering of Equivalent lamps.

6. Introducing requirements for lamps used in the parked condition would inhibit the type approval of vehicles that are approved today. Lamps which are installed and permitted according to national legislation will suddenly fall under the proposed new scope of UN Regulation No.48. To resolve this issue, OICA propose to introduce a new definition for ‘lamps authorized according to national legislation’.

The definition of nationally authorized lamps is an extension of the concept for ‘equivalent lamps’. By including a description of nationally authorized lamps in the communication form, the approval authority is informed that such lamps are not in the scope of the regulation. The paragraph leaves all UN harmonized lighting and light-signalling requirements untouched and delegates the responsibility for approval of lamps according to

national legislation to the authority of the relevant regulation. This topic is essential to be included in step 1, especially for heavy commercial vehicles.

Paragraph 2.5.18 Exterior courtesy lamp (ECL)

7. The Exterior courtesy lamp definition is modified to include the ‘follow me home’ function and additional functions present on vehicles that are registered today. The scope addresses the illumination of the area around the vehicle on approach or depart, as well as measures to identify a vehicle. This is in addition to the illumination of doorsteps or handles as addressed by the current ECL function.

Paragraph 2.5.20.

8. Editorial. Addition of the latest UN Regulation No’s for Vehicle Alarm System (VAS), Alarm System (AS) and immobilizer.

Paragraph 2.5.21. Energy indicator lamp.

9. New definition introduced for an Energy indicator lamp to inform the vehicle user about the energy level, and/or the condition of the energy transfer system and/or the status of energy transfer of the vehicle. This type of lamp is already implemented on current production vehicles available today.

The concept is to introduce a low-intensity tell-tale independent from other defined devices which does not require a separate approval. The external status indicator cannot be used to fulfil this function because the status needs to be visible even in bright daylight and from a distance. If the vehicle manufacturer chooses to indicate the energy status with colour coded responses, the output shall follow the principle for colours specified in ISO 2575:2021 in alignment with UN R121.

Paragraph 2.6.4.

10. The Answer-back [signal] is defined in paragraph 2.6.4.

Paragraph 2.7.10. Lamp test mode.

11. A new definition is introduced for a “Lamp test mode” to enable the vehicle user to perform a function check of the vehicle’s lighting and light signalling devices and their associated systems. This lamp test mode is already implemented on current production vehicles available today.

This function is especially useful on trucks and other large commercial vehicles. Today this mode toggles the function of installed lamps in a pre-defined sequence for a set time limit to enable the vehicle user to inspect each lamp around the vehicle without the assistance of another person.

Without including this function in step 1, this important safety feature would have to be removed from existing vehicles to the detriment of road safety.

Paragraph 3.2.2.

12. Addition of ‘lamps authorized according to national legislation’ to the existing paragraph.

Paragraphs 3.2.10. and 5.36.

13. Paragraph 5.36. prescribes that “Lamps that may be switched ON under the park condition of a vehicle are as follows:(a) Lamps in this UN Regulation as long as they are operated in the same manner as under the normal condition of use of a vehicle; (b) Parking lamps; (c) Exterior courtesy lamps; (d) External status indicators of anti-theft alarm systems; (e) Energy indicator lamp; (f) Answer-back [signal]; and (g) Lamp test mode.” By prescribing “(a) Lamps in this UN Regulation as long as they are operated in the same manner as under the normal condition of use of a vehicle,” those that have already been permitted to be switched on under the park condition (e.g. hazard warning lamp) and lamps that must be switched on, based on the occupant’s judgment, under the park condition, such

as in case of emergency at night time, during tests, etc., will be subject to this provision and this makes it permissible to use them under the park condition.

14. In addition, a document describing the type of lamps to be switched on under the park condition, the trigger and the timing of switching ON and each lighting scenario, except for (a) in 5.36., shall be required in paragraph 3.2.10.

15. By prescribing these paragraphs 3.2.10. and 5.36., the use of various lamps, etc. that can be switched on manually under the current regulations is permitted, taking into consideration the operation at the time of the approval test and the importance, etc. of lamps when the engine stalls, in addition to a comprehensive arrangement and regulation for lamps under the park condition in UN Regulation No. 48.

Paragraph 5.9.4.

16. OICA proposes the following functions may flash and/or vary in their luminous intensity:

- 2.5.21. Energy indicator signal,
- 2.6.4. Answer-back signal,
- 2.7.10. Lamp test mode and
- 2.5.18. Exterior courtesy lamp

Paragraph 5.11.1

17. Extension of the exemption for simultaneous switching of the position, end outline marker and registration plate lamps for the new functions when in the park condition.

Paragraph 5.15 Colours of light emitted by lamps

18. Addition of the colours permitted to be used for an energy indicator lamp. If the vehicle manufacturer chooses to indicate the energy status with colour coded responses, the output shall follow the principle for colours specified in ISO 2575:2021 in alignment with UN R121.

Paragraph 5.37

19. General requirements for 'lamps authorized according to national legislation' were added.

#### 6.24 Exterior Courtesy lamp

Paragraph 6.24.2

20. Extension of the scope of the exterior courtesy lamp (ECL) in order to integrate the existing 'follow-me-home' function. The number 'two' was left unchanged. In a step 2, the number may be further evaluated.

OICA have agreed to follow the request from Japan to integrate follow-me home in ECL. In this case, requirements for ECL need to be modified in order to cover what is done for the follow-me-home feature on vehicles on the market already.

Vehicle manufacturers had to arrange this feature in order to answer to Japan national law (Article 62 of Announcement That Prescribes Details of Safety Regulations for Road Vehicles, etc.:Restrictions on Other Lamps, etc.). But this is not the case for the other countries in the world. For step1, ECL requirements need to be amended.

Paragraph 6.24.9.1.3. and 6.24.9.1.4.

21. To identify the vehicle and not cause unnecessary distraction, OICA proposes to permit the grouping of exterior courtesy lamps in different patterns.

Permitting fade in/fade out illumination following the position of a vehicle user is beneficial for traffic safety as it avoids any sharp variations in intensity. It also avoids illuminating an area or side of the vehicle that is not beneficial to the vehicle user.

Paragraph 6.24.9.2.

22. The rear position lamp, the parking lamps, the end-outline lamps have been added to the list of the lamps allowed to be switched ON as ECL function. This measure is to include the requirements for the follow-me-home light that have already been introduced in Europe into the ECL.

Table Principal differences in requirements between ECL and Answer-back [signal]

	Wake-up/shut-down light function	
	ECL	Answer-back [signal]
Requirements for illumination	To be illuminated constantly	Flashing and varying in luminous intensity and/or apparent surface
Duration	-	Not to exceed 3 seconds

In the early discussions of SIG, follow-me-home light was considered synonymous with ECL and it was argued that it should be combined with the wake-up/shut-down light function until the 5th R48-09SIG session, and measures to extract the requirements for follow-me-home light from the ECL and to combine it with the Answer-back [signal] as a set to form the wake-up/shut-down light function were considered. However, as Finland, the Netherlands, France, and Japan expressed concerns over the administrative confusion and tightening of regulations (e.g., we could accidentally remove some possible installation options currently allowed in Reg. No. 48 and so forth) that may result from the measures to separate the requirements of follow-me-home light from the ECL, and thus it was decided not to newly define the follow-me-home light.

Paragraph 6.24.9.3

23. There are existing examples of ECL illumination that occurs in the park condition that would be prohibited by the new requirements. By permitting the applicant to demonstrate these such illumination is negligible i.e., less than 0.5cd, these features can continue to be installed.

6.27 Answer-back signal

Paragraph 6.27.

24. The requirements for the Answer-back [signal] are prescribed in paragraph 6.27. in connection with the duration of illumination as well as the kind and function of lamps that can be used.

*Duration of their optical indication*

25. The duration of the optical indication of the Answer-back [signal] shall not exceed 3 seconds in the same manner as the external status indicator of immobilisers. This provision that the duration of the optical indication of the immobiliser shall not exceed 3 seconds has not been revised since 1995 to the present. This can be considered a proof that there have been no safety issues. Therefore, the duration of 3 seconds is incorporated as a requirement for Answer-back [signal] from the standpoint of safety for the surroundings. Moreover, as a reference for this matter, Japan has investigated the history of this provision that the duration of flashing of direction indicator lamps was specified as 3 seconds in connection with the external status indicator in R97. This discussion, that was carefully examined by the three meeting structures of GRE, GRSG and WP.29 from 1994 to 1995, was indicated in the official reports and related documents. According to the history that was clearly indicated, initially there was a proposal to allow only 2 flashes, then a provision to allow flashing for 2 seconds was proposed, and finally a provision to allow flashing for 3 seconds was decided. This provision of three-second flashing has been adopted without any relaxation to the present day. It is evident from this history that there was great concern about flashing for more than 3 seconds.

*Types of lighting or light-signalling functions that can be used*

26. Paragraph 6.27.1. prescribes reciprocally incorporated lamps for the Answer-back [signal]. The answer-back signal shall be provided by approved lighting and light-signalling devices according to UN Regulation [and exterior courtesy lamps] whose maximum

luminous intensity does not exceed [700] cd [on or above the HH line] [with the exception of front and rear fog lamps and stop lamps].

*Maximum intensity and colour*

27. With regard to the maximum intensity, colour, etc. of an Answer-back [signal], each lamp shall comply with the requirements prescribed in the individual specifications in paragraph 6. However, lamps with the specifications equal to or less than the individual specifications applicable to the particular lamp are permitted.

*Only the Answer-back light is allowed to flash.*

28. Paragraph 5.9.4. prescribes that the Answer-back [signal] can flash and vary in luminous intensity and/or apparent surface. Moreover, paragraph 6.27.7.3. prescribes that the flashing frequency be restricted to 2.0 Hz or less. This is prescribed based on the flashing frequency of direction indicator lamps.

Energy Indicator Lamp

Paragraphs 6.28.2 to 6.28.6.

29. The requirements for number, arrangement, position, geometric visibility and orientation follow the logic that 'if approved lamps are used then the number shall not exceed the individual specifications applicable to the specific lamp.'

Paragraph 6.28.7

30. As this is regulating the parked condition only, the electrical connections requirements for switching the front and rear position lamps, the end-outline marker lamps, if they exist, the side-marker lamps, if they exist, and the rear registration plate lamp (paragraph 5.11.) and for main-beam and dipped-beam headlamps (paragraph 5.12.) should not apply.

Paragraph 6.28.9.3.

31. If the vehicle manufacturer chooses to develop a unique/dedicated energy indicator lamp (i.e., not utilising an existing vehicle lamp), then the luminous intensity shall not exceed 50cd.

In order not to cause distraction or glare, OICA also proposed maximum luminous intensity values in the case where existing approved lamps are used as an energy indicator lamp. In bright conditions, the luminous intensity above the H-H line should not exceed 700cd. In dim or night-time conditions, the luminous intensity above the H-H line should not exceed 300cd as the signal will remain visible to the user even at a lower intensity.

As these luminous intensity values are not part of the approved lamp measurement requirements, compliance with the given values will need to be demonstrated to the type approval authority. The luminous intensity values measured shall be noted in the communication form.

Paragraph 6.28.9.4.

32. OICA believes 10 seconds is a reasonable time for a vehicle user to look across to their vehicle and acknowledge the energy status level of their vehicle. This is more critical when viewing the status from across a longer distance such as across a car park.

Paragraph 6.28.9.5.

33. In case of a failure related to the energy transfer, it is beneficial for a warning to be given to the vehicle user. In the case of a unique/dedicated energy indicator lamp limited to 50cd, OICA believes there is no need to limit the flashing failure signal to 3 seconds. A parallel example can be drawn from UN R116 where a vehicle alarm system can flash for 300 seconds (5 minutes). Where the vehicle manufacturer opts to use an approved lamp, the duration of this failure indicator is limited to 3 seconds as it is likely to be more visible to other road users.

### Lamp test mode

Paragraphs 6.29.2 to 6.29.6.

34. The requirements for number, arrangement, position, geometric visibility and orientation follows the logic that ‘if approved lamps are used then the number shall not exceed the individual specifications applicable to the specific lamp.’

Paragraph 6.29.7.

35. See justification item 30 for paragraph 6.28.7, the same applies.

Paragraph 6.29.9.1.

36. The lamp test mode may be activated manually and/or automatically.

With regard to the automatic lighting of lamp test mode, Japan requires that provisions are made to ensure that it is not inadvertently activated automatically. Requirements are not yet included in GRE/2022/27.

The inclusion of a lamp test mode is of critical importance, especially for drivers of commercial vehicles.

In the UK, drivers of Heavy Goods Vehicles are responsible for making sure their vehicle is safe to drive. To ensure this, they must do a daily walkaround check before a vehicle is taken out on the road.

Please see the following link to the UK HGV walkaround check:

<https://www.gov.uk/guidance/carry-out-daily-heavy-goods-vehicle-hgv-walkaround-checks>

*You're responsible for making sure your vehicle is safe to drive.*

*Carry out a walkaround check of the vehicle before your journey to make sure it's safe. Report any defects in writing to the person in charge of sorting out vehicle defects in your organisation.*

*The police and Driver and Vehicle Standards Agency (DVSA) officers can stop you to do checks on your vehicles.*

### **10. Lights and indicators**

*Check that:*

- *all lights and indicators work correctly*
- *all lenses are fitted, clean and the right colour*
- *stop lamps come on when you apply the service brake and go out when you release it*
- *marker lights are fitted and work*

Manual operation today is typically activated by a button on the key-fob, but other manual solutions could be offered by the vehicle manufacturer.

OICA proposes to enable automatic operation under conditions where a key is detected, and the vehicle is in a geofenced location such a bus or depot. Alternatively, in accordance with conditions similar to this as stated by the manufacturer and accepted by the Technical Service.

Paragraph 6.29.9.2.

37. To avoid the flashing of light, each lamp/function shall be switched ON and remain switched ON for a minimum of 1 second.

Japan added the requirement that each function lamp shall be switched ON not more than once. However, on passenger cars there are a minimum of 6 light clusters and many more on heavy goods vehicles. Therefore, for OICA it is necessary for each lamp/function continue to cycle ON and OFF for a maximum duration, if not the test mode would constantly need to be re-initiated.

Paragraph 6.29.9.3.

38. The lamp test mode will cycle through the switching ON and OFF of each function while the vehicle user walks around their vehicle. OICA believes 3-5 minutes is sufficient time for a vehicle user to walk all the way around a long heavy goods vehicle. If additional time for the lamp test mode is needed, the vehicle user can manually re-initiate to the lamp test sequence.

The lamp test mode shall always be switched OFF automatically if the vehicle is put in the normal condition of use.

Paragraph 9.31.

39. Additional details were added to the communication form to enable the applicant to indicate which lamps/functions are installed and record their compliance within the requirements where applicable.

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