

Note: This document is based on GRRF-74-18.

The modifications are marked in red.

CLEPA/OICA comments to Japan proposal to regulate LKAS and PAS

During 73rd session of GRRF in September 2012, the Japanese government proposed to create new regulations for Lane Keeping Assist Systems (LKAS) and Park Assist Systems (PAS). The possibility to start a new informal group on LKAS and PAS was also discussed. Delegates were invited by the GRRF chair to consider this proposal from Japan.

The objective of this paper is to present some of the main questions and positions of OICA regarding this Japanese proposal.

From a general standpoint, OICA is not in favour of creating new regulations for LKAS and PAS. The grounds for this position are the following:

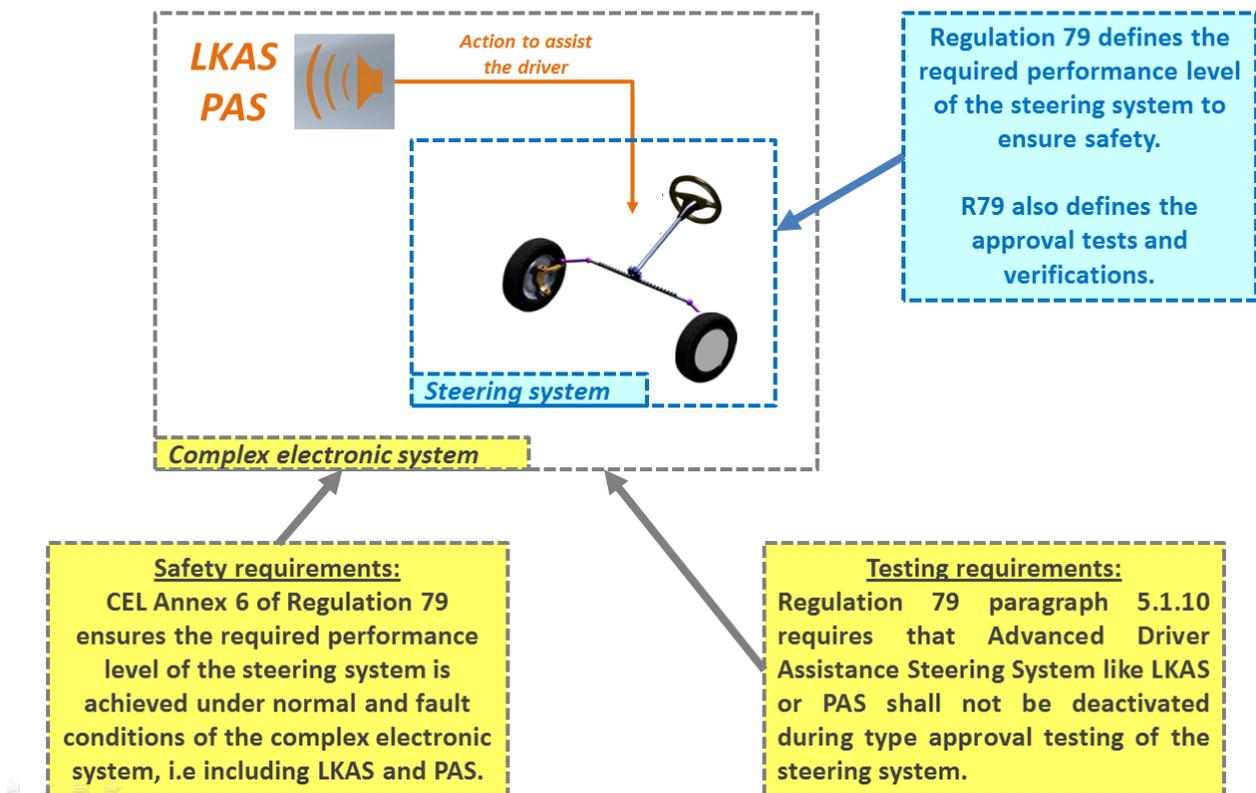
1. LKAS and PAS are new technologies, applied in limited volumes, among a limited number of brands and categories of vehicles. For that reason, OICA considers these technologies not mature enough to be regulated. Establishing new regulations so early would lead to over-regulating by either setting vague provisions without practical impact, i.e. without safety benefits, or including design restrictive provisions, thus blocking innovation.
2. OICA questions the justifications provided by Japan per document GRRF-73-16 (slide 4):
 - The systems currently in the market do not show any safety concern and are approved to existing regulations (e.g. UN R79). The justifications provided by Japan are still lacking of data regarding accidentology background or potential benefits of regulating LKSA or PAS.
 - Thus, it is not clearly justified why technical standards should be required for ensuring a proper level of safety for these systems.
 - Indeed, UN R79 has already today the necessary technical provisions to ensure proper safety level of Advanced Driver Assistance Steering Systems, which cover LKAS and PAS. Most of these systems currently on the market are approved to this regulation.
3. **PAS is a function able to generate continuous control action to assist the driver in low speed parking operations. LKAS is a corrective steering function to assist the driver in maintaining the basic desired path of the vehicle.** The possible risks created by these two functions are already covered by the current text of UN R79, for example through the CEL annex. Based on UN R79 provisions, OICA believes it is secured that LKAS and PAS cannot have negative impact on safety, and that the driver can, at all times, choose to override the assistance function by deliberate action, thus remaining at all times in primary control of the vehicle.

Yet OICA is ready to contribute to a debate at GRRF level for assessing how much UN R79 is appropriate with regard to the LKAS as “corrective steering” function and PAS as “Automatically commanded steering function” (see drawings below).

4. OICA points out that PAS is only a comfort system, acting at very low speed only. Thus, the associated safety risks look not significant.
5. With regard to LKAS, its benefits in terms of safety will be much decreased by the forthcoming entry into force of the new regulation on LDWS for heavy and light duty vehicles: LKAS indeed becomes more a comfort than a safety system when the vehicle is already fitted with LDWS.

As a conclusion, OICA does not support the establishment of an informal group on this item, and in particular challenges the proposed Terms of Reference (document GRRF/2013/06) anticipating new regulations on LKAS and PAS, since safety is already ensured by the current UN R79; Japan did not show clear safety benefits; experience shows that over-regulating leads to blocking of innovation, especially when a technology is not mature, which is the case for LKAS and PAS. OICA would be ready to consider some amendments to UN R79, if the “if fitted” requirements regarding the overriding functions were to be considered not sufficient or may need further clarifications.

How does Regulation 79 cover LKAS and PAS to ensure safety?



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Definitions

- 2.3.4 **Advanced Driver Assistance Steering System** means a system, additional to main steering system, that provides assistance to the driver in steering the vehicle but in which the driver remains at all times in primary control of the vehicle. It comprises...
- 2.3.4.1 **Automatically commanded steering function** means the function within a complex electronic control system where actuation of the steering system can result from automatic evaluation of signals initiated on-board the vehicle [...] to generate continuous control action in order to assist the driver in following a particular path, in low speed manoeuvring or parking operations.
- 2.3.4.2 **Corrective steering function** means the discontinuous control function within a complex electronic control system whereby, for a limited duration, changes to the steering angle of one or more wheels may result from the automatic evaluation of signals initiated on-board the vehicle, in order to maintain the basic desired path of the vehicle or to influence the vehicle's dynamic behaviour.

When is CEL Annex 6 required?

- 5.1.10 [...] **Annex 6 shall be applied to** the safety aspects of electronic vehicle control systems [...] of **the steering function including advanced driver assistance steering systems** [...]. If such systems are provided, they shall not be deactivated during type approval testing of the steering system.

LKAS

PAS

Annex 6 – Complex Electronic

This annex defines the special requirements for documentation, fault strategy and verification with respect to the **safety aspects of Complex Electronic Vehicle Control Systems** [...].

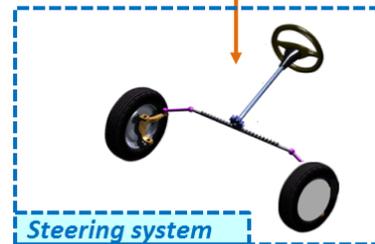
This information shall show that "The System" respects, under normal and fault conditions, all the appropriate performance requirements specified elsewhere in this Regulation.

2.3. "Complex electronic vehicle control systems" are those electronic control systems which are subject to a hierarchy of control in which a controlled function may **be over-ridden by a higher level electronic control system/function**. A function which is over-ridden becomes part of the complex system.

LKAS
PAS



Action to assist
the driver



Complex electronic system

Changes with revision 1: the figures have been updated to reflect that LKAS are "corrective steering" and not "automatically commanded steering", which is prohibited above 10km/h by paragraph 5.1.6.1. LKAS corrects and is permanently monitored by the driver, who can override it if necessary.