Submitted by the experts of CLEPA and OICA

Informal Document: ACSF-13-11

Industry View on ACSF Category C

(justification for the ACSF-13-Homeworks)

The ACSF CAT C is intended as a system that assists the driver with the lane change maneuver, whereby the system actuates upon driver's demand. The intended use of the system is that the driver always ensures that a lane change is possible without endangering other road users, in the same way he would do without the CAT C assistance. Coupled with the longitudinal control, CAT B1+C is regarded as a partial automated system (SAE Level 2) as also indicated in the table of automation (document ITS/AD-11-06 – attached herein) agreed upon in the IWG ITS/AD. As the so-called OEDR (Object and Event Detection and Response) cannot be performed under all circumstances by the system, the driver needs to supervise the driving environment and shall be able to intervene immediately.

The industry implements sensors to detect the rearward traffic for CAT C – single actuation – in order to facilitate the driver with an additional assistance, but not to relieve the driver from the duty to supervise the lane change maneuver. The latter would be the case for a Level 3 functionality, since the OEDR is being performed by the system entirely.
The sensors envisioned for CAT C application have been used for blindspot detection, over a decade and the systems in which they are implemented aim at warn the driver optically from approaching rearward traffic (usually for a TTC < 3 sec).

As for Level 2 functionalities (be it lane keeping and/or lane change functionalities), it is of outstanding importance that the driver is instructed (intended use) and also left to realize (reduced torque authority, low dynamics, requires driver activation, product marketing as assistant, etc.) that he must perform the OEDR at all times, while the system offers assistance. The assistance (thus OEDR) by the system cannot be ensured in all circumstances and at all times, this is why the driver needs to perform the OEDR at all times. For Advanced Driver Assistance Systems (SAE Levels 1 and 2), the Informal Working Group on Automated Driving from WP.1 has recently created an informal document (Document no. 2 at 74. WP.1 – attached herein) stating in its explanatory introduction that drivers using ADAS systems need to keep engaged at all times in the driving task.
It is worth mentioning that the more a system is able to perform the OEDR in a variety of circumstances, the higher the propensity of the driver not to supervise the driving environment (thus misusing the assistance function as automation), resulting in breach of the intended use for such systems. Thus, OICA recommends to treat CAT C as an assisted system as aforementioned because the rearward monitoring capability by sensors cannot be ensured at all times and under all driving circumstances, as it would be for a Level 3 system (whereby the OEDR is performed by the system in the operational design domain).