

Draft REPORT

10th meeting of GRRF Informal Working Group on Automatically Commanded Steering Function

Venue: DGEC (Direction Générale de l'Energie et du Climat)
LA DEFENSE Tour Pascal B - 92800 Puteaux, France
Chairman: Mr. Christian Theis (D) and Mr. Hidenobu Kubota (J)
Secretariat: Mr. Jochen Schaefer (CLEPA)
Dates: 11. – 13. January 2017
Website: <https://www2.unece.org/wiki/display/trans/ACSF+9th+session>

1. **Participants:**
see special attachment

2. **Welcome and Introduction**
The chairmen welcomed the delegates to the 10th session of the IWG ACSF

3. **Approval of the report of the 9th Session**
The report of the 9th Session was approved by the delegates
[ACSF-09-17-Rev1 - \(Secretary\) Report of 9th session](#)

4. **Approval of the agenda**
The agenda was adopted and confirmed by the delegates without amendments.
[ACSF-10-02-Rev2 \(Secretary\) Agenda 10th session](#)

5. List of Documents:

ACSF-10-01 - (F+Secretary) Information about the 10th session	Doku
ACSF-10-02-Rev1 - Provisional Agenda 10th session - order modified	Doku
ACSF-10-03 - (Germany) Category C Lane Change Activation	Doku
ACSF-10-04-Rev2 . (OICA-CLEPA) Proposed amendments to consolidated document ACSF-09-16 - paragraph 12 added, headline corrected to ACSF-10-04	Doku
ACSF-10-05-Rev.1 - (OICA-CLEPA) ACSF - Category B1+C – functional description	Doku
ACSF-10-06-Rev.1 - (OICA-CLEPA) ACSF - Category C - proposal based on ACSF-09-14	Doku
ACSF-10-07 - (OICA-CLEPA) ESF provisions	Doku
ACSF-10-08 - (OICA-CLEPA) ESF tests - proposed concept	Doku
ACSF-10-09 - (Secretary) Definitions for Off, Standby and Active Document last updated as per ACSF-10-09-Rev.1	Doku
ACSF-10-10 - (OICA) Industry - interest for cat C	Doku
ACSF-10-11 - (Secretary) New consolidated after 10th session - for further text amendment proposals, please use GRRF document 83-08-Rev.3	Doku
ACSF-10-13 – (OICA) Amended Definitions	
ACSF-10-14 – (OICA-CLEPA) – Interpretation of CSF warning	

6. **Remark from the Secretary: Results from GRRF83 meeting**

Due to the preparations for the GRRF83 meeting, it was not possible to finalize this report before GRRF83. The advantage is, that it is possible to list here shortly the results of this meeting:

- The secretary presented the results of the ACSF-group and the proposal of the group to amendment Regulation No 79
- Few amendments have been made to the document – see GRRF83-08-Rev.[32](#)
 - * examples for pictures of hands and steering wheel added
 - * amendments in Annex 8, see 3.2.4.1
 - * few corrections in references of paragraphs and amendment in the wording
 - * adding of paragraph 12 – transitional provisions (dates are not finally decided)
 - * [Decision to go for a series 02 instead of a supplement 06 to series 01](#)
- Proposal shall be presented already in the March session of WP.29. Target is, that the amendments will be in force for new vehicle types in April 2018.

Nevertheless, the rest of the report will represent the results of the 10th meeting

7. **Documents to WP.29**

Within the pre-meeting (10. January 2017) of the Contracting Parties (CPs), it was decided to propose to the delegates in GRRF83 to withdraw the document, which should be sent to WP.29 ([GRRF82-12-Rev.3](#)) and to prepare a new document for the June session of WP.29.

UK explained [during ACSF-10 meeting](#) that the reason for this is, that there are a lot of amendments to this document already made until now and further amendments are expected to be made within this meeting.

WP.29 would be not amused, if a document in the March session would be approved, which would have to be amended the following session in a lot of positions.
(Secretary remark: in GRRF83 this decision was revised)

8. **General remark to the documents provided for this meeting**

The chairman of the group, Christian Theis, asked the delegates to provide the documents for the next meetings earlier, that the other delegates are able to read the documents at least a few days prior to the meeting.

9. **Amendments to the current consolidated document [ACSF-09-16](#)**

(Documents: [ACSF-10-04-Rev.1](#), [ACSF-10-04-Rev.2](#))

The delegates discussed about amendments in the consolidated document, which were proposed by OICA/CLEPA. The result of this discussion ends in the **new consolidated document [ACSF-10-11](#)**.

Highlights of the discussion:**9.1. 5.6.2.1.2:**

(OICA): explained with document [ACSF-06-22](#) that an automatic activation for CAT B1 systems should be possible. Also, the automatic deactivation (e.g. if road markings are missing) and a succeeding automatically “re-activation”, if all conditions for reactivating the system are fulfilled, should be possible.

(Chair-D, in the following C-D): is this really ok, that a system will switch automatically to the “active mode”, if it was 10 minutes in the “standby mode”?

(OICA): as the driver always gets the information about the current system mode, they see no problem. This kind of “HMI” is now in production in many vehicles.

(F): do we need an acoustic signal, if we change the modes?

(NL): would prefer a positive action by the driver to reactivate the system, if it was in the standby mode.

(OICA): The display informs the driver about the status of the system

(SE): supports F.

(OICA): We only have an assistance system, not about automatic driving. It will be different for CAT B2. These systems are currently in production.

(C-D): If you have an ACC system, does this activate automatically, if it is in standby?

(Secr.): A comparison between ACC and B1 is not possible. ACC is accelerating the vehicle, which may confuse the driver if it would be activated automatically in the standby mode.

(F): Would like to have at least one activation from the driver, automatic activation from standby while driving is ok.

(OICA): why shall the driver be obliged to activate the system at every start. It is a supporting system.

(NL): supports F.

(OICA): The EC thinks with the GSR to mandate LKS as standard

(C-D): are we talking about a safety- or an assistance system?

Has no problem, if the system switches automatically from standby ⇔ active.

Discussion, whether it should be possible to activate the B1 system automatically...

Result: The paragraph 5.6.2.1.2. is amended as follows:

*The vehicle shall be equipped with a means for the driver to activate (**stand by mode**) and deactivate (**off mode**) the system. ~~The deactivation shall be possible at any time.~~ **It shall be possible to deactivate the system at any time by a single action of the driver. Following this action, the system shall only become active again as a result of a deliberate action by the driver.***

The automatic activation is not forbidden.

9.2. Warning signals**ACSF warnings:**

Discussion about warning signals, which signals shall be different...

Result: The paragraph 5.6.2.2.6. is inserted:

Unless otherwise specified, the optical signals described in 5.6.2.2. shall all be different from each

other (e.g. different symbol, colour, blinking, text).

CSF warnings: interpretation of 5.1.6.2.2.2

- Industry presented ACSF-10-14 – (OICA-CLEPA) – Interpretation of CSF warning.
- Conclusions:
 - Slide 1 presents a proposal for amendment of the text which was discussed and rejected during the session.
 - Slide 2 presents the text of 5.1.6.2.2.2 as adopted at ACSF-10 in Paris, and the agreed interpretation by the group.

9.3. Transitional provisions:

Target was, as already mentioned in previous meetings, that existing vehicle approvals with regard to CSF and ACSF shall not be effected, even if extensions of approvals are necessary in the vehicle

~~After a discussion, whether it would be necessary to have transitional provisions or not,~~

The group shortly discussed the possibility of introducing transitional provisions per document ACSF-10-04-Rev.2.

OICA introduced the proposal as a confirmation of the group's decision (ACSF-09 in Osaka) for a common interpretation that the provisions for CSF, ACSF C and ACSF B1 should be introduced via a supplement 06 to the current series of amendments to UN R79.

The group confirmed this interpretation, and added that the functions approved prior to the introduction of the new supplement should not be required to comply with it, even in case of an extension. This was considered sufficiently obvious for making transitional provisions unnecessary in this regard.

The group encouraged Industry to request a confirmation of this interpretation at GRRF-83, such that no ambiguity would be found in the application of the provisions for CSF, ACSF A and ACSF B1.

UK made the following proposal:

OICA should raise this question in GRRF, then this will then be fixed in the report of GRRF83. The Chairman of GRRF will bring this up in his report to WP.29.

(Secretary remark: see paragraph 6 in this document)

9.4. Test procedures for CSF (c.)

Discussion about the lane markings and boundary conditions.

(OICA): Performing the test with lane markings according to the proposal of the vehicle manufacturer

(NL): is a good idea

(C-D): do we need the boundaries at all?

(UK): The test should be performed in both conditions; lane markings and boundary conditions, depending on the vehicle performance.

(SE): do we also need tests for CSF a. and b.?

(Secr.) dynamic tests cannot be performed, as there is only very limited

reproducibility – see ESC on low- μ

Homework: OICA to provide a proposal to 3.1.1.1.

OICA to check, whether we can delete the simulatton paragraph

OICA to check, whether the override test of B1 can be used for CSF

Discussion about the “180 s” test in 5.1.6.1.2.2.

Text: *...In the case of two or more consecutive interventions within a rolling interval of 180 seconds and in the absence of a steering input by the driver **during the intervention**, an acoustic warning shall...*

(OICA): proposes to delete ”duricng the intervention” and to reset the 180s counter with every activity of the driver (not only while the system intervention).

Decision after the discussion: no amendment of the sentence.

If, during the test, the time for the acoustic warning (10s for M1/N1; 30s for M2, M3, N2, N3) this shall also be declared as “test passed”

In the case, the test cannot be performed, there shall be a explanation from the vehicle manufacturer to the satisfaction of the Technical Service, that the function is realized as required in the regulation.

The override force test of CSF, which is included now in Annex 8, is a “carry over” from the CAT B1 override test.

See consolidated Document [ACSF-10-11](#)

9.5. Definitions for ACSF (ACSF-10-09)

Long discussion about the wording of the definitions for “Off mode”, Standby mode” and “Active mode”.

The definitions of “off / standby /active” modes adopted at ACSF-06 (Tokyo-April 2016) and confirmed at ACSF-09 (Osaka-November 2016) were extensively re-discussed on both first and second day of the meeting. The group exhausted the different interpretations of the definitions, using slide 5 of industry document ACSF-06-22.

For the sake of clarification, industry worked overnight on a new text, amending consolidated document from Osaka ACSF-09-16: see document ACSF-10-13 – (OICA) Amended Definitions.

The group investigated the meaning of the “conditions for being active” in the definitions contained in document ACSF-09-16, and agreed on the following understanding:

The “conditions for being active” means:

- the system operating conditions (e.g. the actual speed is within operating speed range, lane markings are detected), as well as
- the deliberate action(s) from the driver.

It was also clearly stated that these “conditions for being active” may change according to the system and will be provided by the vehicle manufacturer to the technical service (as per paragraphs 5.6.1.3. and 5.6.2.3. and CEL Annex). For example, in case of a B1 the system may automatically go from standby to active mode, while for a B2, a deliberate action from the driver would be needed.

Finally the following definitions were concluded:

- 2.4.13** *An ACSF is in “off mode” (or “switched off”) when the function is prevented from generating a steering control action to assist the driver.*
- 2.4.14** *An ACSF is in “standby mode” when the function is switched on but the conditions (e.g. system operating conditions, deliberate action from driver) for being active are not all met. In this mode, the system is not ready to generate a steering control action to assist the driver.*
- 2.4.15** *An ACSF is in “active mode” (or “active”) when the function is switched on and the conditions for being active are met. In this mode, the system continuously or discontinuously controls the steering system is generating, or is ready to generate, a steering control action to assist the driver.*

9.6. Warning signal for CAT B1 – Hands off

With the new proposal to display the warning signal for hands off at least after 30s in red, the discussion came up, because vehicles which have currently a monochrome display are not able to change it without a transition period.

All delegates would accept a period of 24 month, despite EC is not in favor, to define transitional provisions at all.

(UK): Repeated the importance to have the signal after 30s in red.

Homework: UK to provide a wording for monochrome displays until/in [GRRF83](#)

10. Category C

OICA presented document [ACSF-10-10](#), the interest of the industry for CAT C, which also highlights a study about the use of the turn indicator.

(C-D): this study is 17 yrs old and is from the US. Can it be transferred to Europe?

(EC): ok, that will increase the use of the turn indicator, but what is about “over-reliance”?

(OICA): Over-reliance have to be avoided, we think, we can cover it with our proposal.

(C-D): What is the benefit of CAT C (with HMI-only) with regard to the driver workload?

(OICA): if the system performs a smooth lane change, this will reduce the workload

(EC): What is the safety value if the system?

- use of direction indicators
- maybe reduce of workload
- not more?

(OICA): Advantage is *for example* for commercial vehicles, until the trailers have sensors

(EC): Commercial vehicles should stay in their lane.

(C-D): The vehicles on the market, do they have the HMI solution?

(OICA): no, they are working with sensors to the rear. *These sensors are present for the purpose of other ADAS (e.g. blind spot), they are pre-existing to the ACSF-C and are kept operational when ACSF C is switched on. The manufacturer could demonstrate that the addition of ACSF C was not detrimental to safety.*

(NL): has the fear of over-reliance.

(Chair Japan in the following C-J): would like to focus on passenger vehicles. “Are sensors necessary?”

(F): the others (as passenger vehicles) should not be excluded

(OICA): for industry, all vehicle categories are in the scope.

...and to the question of C-J with regard to sensors: the common strategy, which was discussed briefly in previous meetings was to focus on a pure HMI solution, but sensors to the rear shall be optionally possible.

(C-D): It was no decision, that HMI alone is possible, as some CPs are hesitant.

(UK): Can OICA please explain step by step the lane change process.

With document [ACSF-10-05-Rev.1](#) OICA explained the lane change process

(C-D): are the 15s/30s not too long?

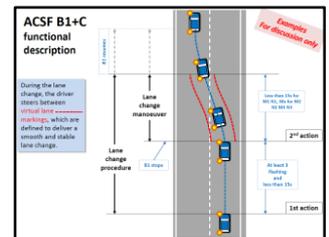
(OICA): This is the maximum, depending also on the road conditions.

(UK): We should put the 3 flashes in [...]. Maybe we need a time.

(OICA): That should be discussed when we specify the requirements.

(EC): Do we need for CAT C also ACC?

Interest for ACSF category C	
Safety related items / Features	<ul style="list-style-type: none"> • Ensures activation of flashing indicator in case of a lane change • Smoother - standardized LC <ul style="list-style-type: none"> ◦ Better traffic flow ◦ Prevents aggressive driving / educates drivers, encouraging good driving behaviour • Reduce driver workload, e.g. on CVs (more time for monitoring / checking critical situations) • A natural supplement to B1 / increases usage rate of the assistance system • Drivers are expecting continuous assistance even when changing the lane • Comfort for driver
Strategy	<ul style="list-style-type: none"> • Step wise introduction of automation, e.g. for CVs (likely not to start with cat D or E, until the trailer is involved) • Get social acceptance / Create some trust in the systems • Affordable entry systems for automation • Makes B1 more attractive, leading to higher market penetration rate
Misc.	<ul style="list-style-type: none"> • Make technology visible • Commercial interest (UNECE)



(OICA): in the Daimler system, which is now in production, CAT C is combined with CAT B1 and ACC.

(C-D):

- 1) are the 15s/30s fixed in a vehicle type?
- 2) what is happening, if the driver brakes/accelerates while the lane change?

(OICA):

- to 1) 15s/30s may vary by speed or maybe when using a caravan
- to 2) if the acceleration will be higher than a certain value, CAT C may switch off

(D): in normal use cases, the driver will accelerate when overtaking.

(OICA): That must be communicated to the driver

(D): The problem is, that the current system on the market has sensors and ACC.

(EC): Does not see a system of CAT C without ACC.

(OICA): The driver is supported also without ACC.

(UK) Supports EC – does the system include ESF?

(OICA): There is no direct link between CAT C and ESF

(C-D):

- 1) phase B1 with monitoring of “Hands-on”
- 2) Phase “lane change” without B1. If he is driving here without hands-on, the driver cannot react fast enough, in case the system will switch off.

(D): Would it be necessary to reduce the “hands-on-monitoring” while the lane change manoeuvre to e.g. 3s?

(OICA): The monitoring time for CAT B1 should be used.

With document [ACSF-10-06-Rev.1](#) OICA explained the Draft Proposal for category C requirements

(C-D): The system shall only work on highways^{*)}

(F): Yes, that should be clear!

(D): Yes, highway^{*)} only

(OICA): This was only the reference to document [ACSF-09-04](#)

(C-D): But this document was never discussed before.

(F): Must clarify the position of F, but he sees the system only on highways^{*)}

(C-D): The decision of D is, that rear sensors must be available in the system of CAT C. This decision is fixed, until good arguments for HMI-only are available.

(F): Will present the strategy of F in ACSF 11th session

(J): Confirms the use of CAT C only on highways^{*)}

^{*)}: Remark Secretary: with “highway” we mean highways, motorways or highway-like roads, with at least two lanes and a separation to the oncoming traffic

(NL): Supports sensors to the rear with good performance. Solutions with poor sensor performance should be avoided.

(ROK): supports sensor solution (is this then a “CAT C2”?)

(UK): Supports sensor performance like CAT E. Do we need CAT C at all?

(OICA): Can D present the reason, why a CAT C system was approved?

(C-D): The member states have agreed (with Article 20 of the EC laws) to this. They did not believe, that there is a safety advantage, but there is also no loss of safety.

The vehicle has sensors, with good performance to the rear and to the side.

Why do the manufacturers of current CAT C systems use sensors?

(Daimler): This is the first step towards automatic driving. The sensors are also used for other systems.

(F): Do we have to test $A_{y_{max}}$?

(D): If CAT C is deactivated, is also B1 deactivated?

(OICA): The OEM should be free to decide.

(UK): The “first” and “second command” for activation of the lane change manoeuvre should be more clear.

(D): Is there another “first command” as the use of the indicator switch?

(OICA): Yes, it could be a switch on the steering wheel. HMI should be in responsibility of the vehicle manufacturer.

... to be continued in the next meeting

11. Next meetings

IWG ACSF11:

Date: 28.-30. March 2017

Venue: Berlin (D)

Further information to the next meeting: [ACSF-11-01 - Info on the 11th meeting](#)

IWG ACSF 12:

Date: 16.–18. May 2017

Venue: Seoul (ROK) details follow.

Please provide the documents for the next meeting at least one week prior to the meeting start