

Draft REPORT

13th meeting of GRRF Informal Working Group on Automatically Commanded Steering Function

Venue: different locations in Paris, France
Chairman: Mr. Hidenobu Kubota (J) and Mr. Oliver Klöckner (D)
Secretariat: Mr. Jochen Schaefer (CLEPA)
Dates: 12. – 14. June 2017
Website: [ACSF 13th session](#)

1. **Participants:**
see special attachment

2. **Welcome and Introduction**
The chairmen welcomed the delegates to the 13th session of the IWG ACSF

3. **Approval of the report of the 12th Session**
The report of the 12th Session was approved by the delegates
[ACSF-12-14-Rev.1 - \(Secretary\) Report of 12th session.pdf](#)

4. **Approval of the agenda**
The agenda was adopted and confirmed by the delegates without amendments.
[ACSF-13-02-Rev2 \(Secretary\) Agenda 13th session](#)

Abbreviations used in this document :

LC: Lane Change
DI: Direction Indicator
TS: Technical Service

5. List of Documents:

ACSF-13-01 - (France and Secretary) Information to the 13th session of ACSF	Rev.1
ACSF-13-02-Rev.1 - (Chair) Agenda 13th session	Rev.1
ACSF-13-03 - (CITA) Requirements for Type Approval and PTI	Doku
ACSF-13-04 - (Japan + Germany) Proposal for Category C1	Doku
ACSF-13-05 - (Japan) Proposal for Category C1	Doku
ACSF-13-06 - (Republic of Korea) Required Steering Control Effort to override the directional control of ESF and C1	Doku
ACSF-13-07 - (NL) Comments to the ESF proposal ACSF-12-11	Doku
ACSF-13-08 - (SE) Discussion paper on Calculation of safety distance for ACSF	Doku
ACSF-13-09 - (EC) Proposal for amendments for Category C1- based on ACSF-13-04	Doku
ACSF-13-10 - (OICA-CLEPA) ESF - Proposal for amendments based on ACSF-12-11	Doku
ACSF-13-11 - (OICA-CLEPA) Justification for ACSF Category C	Doku
ACSF-13-12 - (OICA-CLEPA) Proposal for ACSF C1 - based on ACSF-12-12	Doku
ACSF-13-13 - (Japan) False reaction test for ESF	Doku
ACSF-13-14 - (Japan) Position of a plastic sheet	Rev.1
ACSF-13-15 - (OICA-CLEPA) Sensor performance requirements and testing	Doku
ACSF-13-16 - (Secretary) Consolidated Document for ACSF-C1 - incl. Homework	Doku
ACSF-13-17 - (Secretary) Consolidated Document for ACSF-ESF - incl. Homework	Doku

6. Target of the meeting

Target of the meeting was to finalize the ACSF Category C1 and ACSF-ESF, to present the delegates in GRRF84 a complete Working Document.

This target could not been finally reached, as there are still a lot of issues in [...]. It was concluded, that before the GRRF session in September in Geneva, another meeting of the IWG ACSF is planned. This meeting is scheduled for end of August 2017.

Details see 9.

7. Amendments to the current consolidated document [ACSF-12-12](#)

7.1. Definitions, disclaimer and “highway”

Documents: [ACSF-13-04](#)

2.4.13 (‘lane change procedure’)

(UK): Is it the intention, to mandate, that the vehicle is approaching the lane marking?

(OICA): This is the normal way. We should have this optional, that the approaching is possible already within the 3s (direction indicators on)

Based on the discussion, the definition was amended.

Discussion about a **disclaimer**, which should be displayed after “engine start”, or when the ACSF-C1 is activated by the driver.

(OICA): Is not in favour of a disclaimer

(SE): Do we have a justification for the disclaimer

(UK): A justification would be helpful.

(OICA): Does not have any information, that a disclaimer improves the safety.

(CLEPA): This is not a safety issue – this is product liability.

(UK): If this is an issue with product liability, we have to tell it to the driver.

(Secr.): Do we want, that the disclaimer occurs on a highway, when the ACSF-C1 was activated? Isn’t it very dangerous, if the driver has to read/confirm the disclaimer at high speeds?

Conclusion: Disclaimer remains.

Discussion about the requirement, that the system has to detect, that the vehicle is driving on a “**highway**” when the system is able to be activated.

At the beginning of the discussion, some CPs agreed, that the system may have a “detection rate” of not more than “99%”. This means, that there may be certain conditions (construction areas, rerouting of the highway etc.) where the detection by the system may be wrong.

(UK): has the fear, that in case, the CAT C1 system can be put in standby at every time, it could be, that the system may misinterpret the map and the system will be activated, if the driver is not expecting this. How is it possible to ensure the safety if highway cannot reliable be detected?

At the end of the discussion it was decided, to keep this part in [...]. CPs expect from industry to solve this problem, e.g. by the use of better maps.

But, industry has currently no solution on this!

At the moment, there is also no solution, that the system can be tested on proving grounds. OICA explains, that it is not possible to include all proving ground in the world, they propose to have a possibility to “release” the function by a diagnosis tool.

Conclusion: Detection of a “highway” remains a critical issue!

7.2. Overriding force 30/50N

ROK presented document [ACSF-13-06](#)

The proposal of ROK is to limit the overriding force to 30N.

(OICA): Could agree to the 30N for passenger vehicles. For trucks the value should remain on 50N.

(Sec.): Has tested on a simulator the 50N and had not the feeling, that this is too much.

Offers for interested CPs to make their own experience on this value on this test bench.

The test bench is located in Schwäbisch Gmünd – South Germany.

Conclusion: Overriding force remains in [30/50]N

7.3. Lateral acceleration (5.6.5.4), HMI (5.6.5.5)

Delegates agreed to these paragraphs

The requirement 5.6.5.5.1 (specifying that all optical signals shall be different from each other) shall be reviewed once all HMI requirements will be finalized.

7.4. Lane change procedure (5.6.5.6)

Discussion about the use of the direction indicator (DI).

(UK): As it is unclear at the moment, how to start the lane change procedure and to make it understandable for the driver – do we need to amend the Regulation 48?

(J): Has checked this – there is currently no conflict with Regulation 48.

Discussion about the time, which shall be allowed, if the lane change manoeuvre cannot start after the 3s flashing of the DI lamps.

The total time (incl. the flashing time), until the system will be switched off, should be:

NL:	3s
EC:	10s
F:	10s
SE:	3-5s (driver should remain responsible)
ROK:	10s
D:	10s
J:	10s
UK:	depending on technology:
	5s with low performance rear sensors
	10s with high performance rear sensors

Conclusion: [10s]

Discussion about the use of the DI-lever and -lamps in general.

General remark: “tip-blinking” is possible!

(SE): The DI-lamps have to flash, until the lateral movement is over.

But, when is the lane change “over”?

- At the end of the LC-manoevre?
- When the vehicle is centred by “CAT B1” in the lane?

(Secr.): is it possible to detect the clear point, when the LC-manoevre is over?

=> 5.6.5.6.7. was amended.

(DAI): The current solution in the vehicle is:

- use “tip-blinking” => DI-lamps are ON for 5s, in this time the manoeuvre must be performed
- use of DI-lever in “latched mode” => max. 10s time for lane change; manual deactivation by the driver is necessary

(D): Should there also be an automatic release of the “latched mode”?

(DAI): This is currently not possible in the design of the DI-lever.

(Secr.): Would it be the better way, that CAT C1 will be activated only if “tip-blinking” is used and not, if the DI-lever is in the latched mode?

Conclusion: open

7.5. Sensor range

This item was discussed very passionate. Nevertheless there is currently no solution in sight, which can be supported by all CPs and industry.

Industry is focusing on the fact, that the CAT C1 system is a Level 2 system and the driver is always in full responsibility when doing the LC-manoevre – does not matter, whether he is doing it manually or supported by the system.

The position of the CPs is, that the system must have safety features (rear monitoring) as the drivers may rely on the system and do not sufficiently control the LC as necessary.

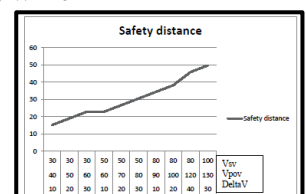
(UK): Cannot accept to calculate the requested sensor range only based on “Time To Collision” (TTC). He expects, that the driver reaction time, the “deceleration distance” (in case the target vehicle is faster) and the safety distance based on the vehicle speed is considered. He thinks, that a distance of 90m should be necessary.

(OICA): Is surprised about this approach, as this is far away from that values, which have been discussion in the past.

(SE) presented document ACSF-13-08.

This is the lowest safety level which can be accepted by SE.

The calculation was done with 4 m/s².



(NL): refers to [ACSF-04-05](#).

(Sec.): But these were the requirements for CAT “E”

(OICA): We also have to consider, that if a car is in the sensor range, the LC-manoevre will be aborted. Maybe we should consider for the target vehicle another value as 3 m/s², which can be considered as “comfort braking”.

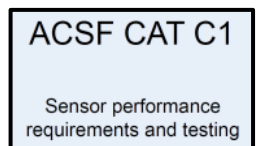
(C-D): This is not an automatic LC-system.

(NL): If we consider the “10s” (possible delay of the LC-manoevre) it is nearly an automatic LC-system. If the system is performing a LC, then it should do it as a good driver.

(UK): Under any condition the safety distance should be respected.

(CLEPA): Presented [ACSF-13-15](#)

This show a “practical” proposal for the sensor range of the system and the possibility to test the requirements. The presentation includes the proposal to perform the tests with an M1 vehicle.



(UK): Tests with motorcycles are necessary. For this a Radar Cross Section (RCS) value is necessary to be specified, which is used in the type approval test.

(NL): Agreed to UK to use a L3 motorcycle.

(D): Agreed as well.

A table was filled with the requirements of the CPs.

(This document is not public and was distributed only to the delegates of the ACSF-IWG)

CP	Concept of Sensor Range (Fixed value or Formula)	Sensor capability check (Concept of OICA / Acceptance)	Lower change limit of safety distance of 8 m is observed (Safety distance = 1 m)
UK <i>Draft only!</i>	$100 \cdot \sqrt{1 + \frac{v^2}{c^2}}$	Yes	2 vehicles
Sweden	$(100 + 0.1 \cdot \sqrt{v^2 + 1000}) \cdot \sqrt{1 + \frac{v^2}{c^2}}$	Yes	3rd vehicle in sensor range of
Netherlands	$ACSF-13-15 (2.2.2.2 \text{ m/s}^2)$	Yes	3rd vehicle
EC	$100 \cdot \sqrt{1 + \frac{v^2}{c^2}}$?	Align with EC proposal
France	?	?	OK
Germany	$100 \cdot \sqrt{1 + \frac{v^2}{c^2}}$	Yes	OK
Germany	$100 \cdot \sqrt{1 + \frac{v^2}{c^2}}$	Yes	Vehicle of the car / 2 in
Japan	$100 \cdot \sqrt{1 + \frac{v^2}{c^2}}$?	Align with EC proposal

Decision:

The calculation proposals for sensor range and safety distance will be removed from the document and will be replaced by “tbd.”

In the next meeting this will be discussed again.

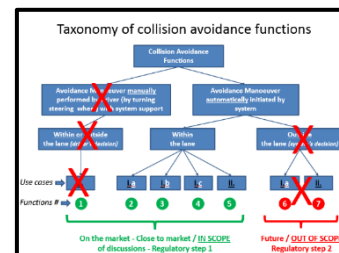
Homework: OICA to provide a drawing with the coverage of the rear sensor at the side of the vehicle.

All remaining open issues for CAT C1 are marked in the consolidated document [ACSF-13-16](#). This document includes also the homework for the delegates.

7.6. Emergency Steering Function (ESF)

OICA presented the agreement made in the 12th session, where the delegates have decided to focus only on “Avoidance Manoeuvre automatically initiated by system” within the lane and not initiated/controlled by the driver.

The consolidated document [ACSF-13-17](#) includes all the open issues, which should be clarified in the next session. All other parts are accepted by the delegates.



Highlights of the ESF discussion:

5.1.6.2.2.:

(UK): We should consider, that the vehicle shall not leave the road.

Warning:

(OICA): proposed that instead of an acoustic warning also a haptic warning should be accepted.

(NL): Do we need to specify the “sound” of the warning?

(UK): In cases of ESF a blind spot warning signal might not been seen.

(Secr.): In case the driver will not notice the optical warning, we have the second warning.

PTI:

(UK): We should consider the requirements of PTI.

(OICA): At ignition on, a failure is displayed.

(UK): Is 5.5.2. sufficient, or do we need a general remark in the regulation?

(OICA): Thinks, this is sufficient, as it is mentioned in the “general” part of the regulation.

ESF Tests:

OICA explained the tests proposed in [ACSF-13-10](#)

(Secr.): Is this a preliminary description?

(OICA): No, details of the tests should be defined between the Technical Service (TS) and the vehicle manufacturer.

(C-J): At least some details are necessary.

(OICA): We can add more details, but the values should be defined jointly with the TS.

(UK): But here we have the risk that the TS will approve whatever the manufacturer will bring. The agreements between the TS and the manufacturer shall be at least in the test report.

(J): Presented proposals in document [ACSF-13-13](#) and [ACSF-13-14](#) (incl. [14-Rev.1](#))

(OICA): in this case, the system should not react.

8. Documents to GRRF84

The proposal from B. Frost (Chairman of GRRF) is to prepare a working document with the latest status (including the open issues) for GRRF84. Final decision should be taken by the chairmen.

Remark:

(C-J): Has decided 22. June 2017, that with regard to the high number of open issues, no working document with the current status should be provided to GRRF84.

9. Next meetings

IWG ACSF14:

Date: 30. August – 1. September 2017

Venue: TÜV-Rheinland in Köln, Germany

Details: [ACSF-14-01 - \(Germany and Secretary\) Information to the 14th session of ACSF](#)

GRRF84:

Date: 18.–22. September 2017

Venue: United Nations in Geneva, Switzerland.

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