

REPORT

1st meeting of GRRF Informal Working Group on Automatic Commanded Steering Function

Venue: Federal Ministry of Transport and Digital Infrastructure in Bonn, Germany.
Chairman: Mr. Christian Theis (D) and Mr. Hidenobu Kubota (J)
Secretariat: Mr. Jochen Schaefer (CLEPA)
Dates: 29.-30. April 2015
Website: <https://www2.unece.org/wiki/display/trans/ACSF+1st+session>

1. Participants:
see special attachment

2. Welcome and Introduction

3. Roll call of delegates

4. Approval of the agenda

The agenda was adopted and confirmed by the delegates.

[ACSF-01-01-Rev1 - Provisional Agenda for the 1st IWG on ACSF-Rev1.pdf](#)

5. Terms of Reference:

[ACSF-01-02 - \(D\) Proposal to establish an Informal Working Group on ACSF \(GRRF-79-23\).pdf](#)

D presented the document, which was the basis for the approval of the GRRF/WP.29 to install the Informal Working Group (IWG) ACSF (Automated Commanded Steering Function).

The GRRF-Chair B. Frost added an issue, which was discussed in the WP.29 meeting:

The IWG ACSF shall review the timeline of the planned activities and shall report the update of the timeline in the WP.29 meeting in June 2015 (166th session). D proposed to postpone the deadline to GRRF81 (Feb. 2016)

6. Concept paper:

[ACSF-01-11 - \(J\) concept paper.pdf](#)

J presented the concept paper where the main tasks of the IWG to increase the current limitation for ACSF in UN R79, which is 10 km/h, are described.

UK informed the delegates, that the "Level"-definition is not finally confirmed.

D proposed, not to use the levels and focus the work on the technologies. This was confirmed by other delegates. The level definition should be done in the ITS-AD group. This was supported by EC, OICA and CLEPA. Nevertheless there should be a close interaction with ITS-AD.

Important issues are:

- a. Driver responsibility
- b. Liability of the vehicle manufacturers
- c. Driving environment and “self-detection” of systems
- d. Necessity of Event Data Recorder (EDR)
- e. Focus only on steering regulation UN R79
- f. Periodical Technical Inspection (PTI)

Ad item a.

It has to be ensured, that the driver is always aware of the system status. Driver should be always in the loop.

Ad item b. and d.

UK: Where is the liability, when the system fails?

OICA: there is no liability shift. In case of a vehicle/system failure the OEM is already responsible today.

EDR might be also necessary to record who has driven the vehicle – the system or the driver.

OICA stressed that data ownership and data privacy must be considered.

Ad item c.

The delegates are supporting, that at the first step, ACSF > 10km/h should be limited to highways or roads which have similar conditions as highways (normally: no intersections, pedestrians, cyclists...).

Especially the constructional separation of the driving lane is important.

UK stressed, that the detection of a not regulation conform road condition should not be left only to the driver.

OICA doubts, that this detection can be assured under all conditions by the system itself.

Ad item e.

The delegates support the focus on UN R79.

EC shows flexibility even if a new regulation would be proposed for automated driving systems.

UK remarks that the mandate of the IWG is only dedicated to the UN R79.

UK supports to only regulate what is really necessary, not to regulate everything.

D, OICA proposed to focus in UN R79, other issues should be raised as a recommendation to GRRF.

Ad item f.

PTI requirements are not seen to have the first priority in the discussion. It will be discussed in detail, when the basic amendments of the regulation are defined.

7. Industry Proposal

[ACSF-01-09 - \(OICA-CLEPA\) Industry input - Objectives process.pdf](#)

OICA presented the view of industry to the objectives of the group.

“... ”

6. Lane changing ... can be initiated by the system or the driver...

7. It is the driver's responsibility to use the system only in those areas it is designed for...”

UK: (6.) Lane change must be issued by the driver!

J: (6.) support UK, otherwise attentiveness of the driver is permanent necessary

D: (6.) the active part should remain at the driver

(7.) This should be done by the system.

EC: (6.) depends strongly, whether the driver is aware of the situation

General questions – not finally answered in the discussion:

- If the driver switches ON the system, is this the confirmation for all lane changes following?
- Can we talk about “automation”, if the driver has to confirm every lane change manoeuvre?
- Would an overtaking manoeuvre require two confirmations (two lane changes)?

D: if a driver want to keep in the lane -> ACC is sufficient

If the driver wants to keep the speed -> overtaking initiated by the system is necessary

D prefers an “automatic” overtaking

CLEPA: the focus of the discussion should be on the four different systems explained on page 3 of the document.

(1) Lane guidance in the lane, at cruise or low speed (e.g. in traffic jam) *

(2) Lane changing by the system after acknowledgment/request*

(3) Lane changing by the system after driver information*

(4) Lane changing by the system without driver information*

*: Highway or similar roads only

UK/J: Industry was asked to present in the next meeting more information on upcoming systems, incl. dependence of other technologies that might be affected.

Heavy Commercial Vehicles (HCV)

[ACSF-01-10 - \(OICA\) HCV industry input.pdf](#)

OICA presented the document and gave an outlook on the systems in development for HCVs

8. German proposal for Amendment of UN R79

[ACSF-01-08 - \(D\) Draft Amendment R-79.pdf](#)

D explained the proposal to amend UN R79 with regard to the increase of the 10 km/h limit for ACSF to 130 km/h. 130 km/h is based on the current law in Germany (Richtgeschwindigkeit – recommended speed) and the speed limit in other countries.

UK showed surprise and need some more time to review the proposal. The first impression is, that there is a need for more performance based requirements. Warning of the driver is an essential issue, maybe depending also on the system configuration.

NL : Proposal is too early and too general (e.g. warning concept)

EC: good starting point

J: the attentiveness of the driver is not considered enough in this proposal

OICA: agreed to the proposal. Warning time depends also on the complexity of the situation. Driver monitoring is limited only to driver activities, not to drivers “mood/mental attentiveness”. A 100% detection of the driver’s attention seems to be actually not possible.

D asked BaSt to check whether more information with regard to HMI is available and to present this in the next meeting. J and OICA will also check the availability of HMI research data.

D: currently LKAS (with corrective steering) + ACC are on the market, automated parking is possible up to 10 km/h. The “only” step now would be the automated steering above 10 km/h.

EC proposes to have a first look to the topics, then clarify the topics and then prepare the amendments to the regulation (and not vice versa)

CLEPA/OICA questioned, whether the OBD part is really necessary, which would be unique compared to other regulations. Extended requirements should only be defined, if problems in the field are justifying this.

CLEPA showed parts of the presentation, they presented in GRRF78 (78-31)
The movie showed the principal function of a Highway Pilot
[GRRF-78-31 - \(CLEPA\) \(R\)Evolution of Driving Assist Systems](#)

OICA showed the presentation Use-Cases for ACSF:
[ACSF-01-12 - Use cases for ACSF.pdf](#)

Purpose of the presentation is to demonstrate the different use-cases. This includes also emergency situations. The delegates support, that the emergency cases, where the driver is out of the loop (e.g. heart attack) should be handled separately from “normal” driving operations.

Debate with regard to the necessity of driver a release for every lane change manoeuvre without final conclusion.

D: System should not bore the driver with permanent demand for overtaking release.

UK: System should not change the lane, if the target lane is locked few meters behind.

The chair summarized the main points:

- How to ensure safe transition from system to driver?
- How ensuring safe reflecting driver’s intention (and proper driver’s attentiveness)?
- How ensuring safe completion of the task?
- How to ensure safe lane change?

9. Homework

[ACSF-01-13 - \(Chair\) Homework for the next meeting.pdf](#)

The result of the discussion of the second day is reflected in the definition of the “homework” for the next meeting. This document was drafted by J and amended within the meeting. The document should be used for the delegates to prepare the next meeting.

Home work for 2nd meeting

1. **Research data for HMI, malfunction indication**

- *Communication/interaction vehicle to driver*
- *Reaction time under diff. scenarios (DIL/DOL)*
- *Take into account UN R79 – Annex 6*

→OICA, CLEPA, each CPs

UK: communication to the driver is very important. HMI should be handled in this group. We should not wait for ITS/AD. The GRRF-Chair is flexible

2. **The draft contents for System integrity monitoring/recording**

- *Interface OBD?*
- *Take into account UN R79 – Annex 6*
- *System operational check*

→Germany, JP, UK, OICA/CLEPA

D: Requirement with regard to PTI is to ensure, that the system works correctly
OICA: asked for the justification of the needs for a new requirement different to what is currently in the regulations
NL: Sympathy to OICA comment. System must be safe every day.
UK: Driver must be informed immediately, in case of a failure

3. Develop the text (amendment of R79) from the following point of view

- Functional/measurable performance requirements for e.g. Lane Changing
- Ensuring the safe transition from the system to driver
- Ensuring the reflection of the driver's intention correctly
- Ensuring driver's attention
- Ensuring the safe completion of the task.(e.g. over-taking)
- Other safety requirements
- Classification of ACSF?
 - ◇ E.g. <10km/h, <60km/h, >=60km/h
 - ◇ or related requirements as:
 - parking,
 - with driver input,
 - without driver input
 - ◇ or system functionality

UK: propose to think about introducing Classes for ACSF. There also expectation/responsibility to/of the driver attentiveness could be different. What is the ability of the system to perform it in a safe way?

CLEPA: presented a table capturing the different possible functions relating to the regulatory systems (Lane Keeping & Lane Changing). This was accepted by the group as a tool for summarizing the necessary requirements according to the functionalities.

- Capability of the system with regard to environmental conditions and physical infrastructure (e.g. highway)
*if possible, please raise the idea for the proper test protocols.

→OICA, CLEPA

4. The additional introduction of the advanced technologies in which industries intend to introduce in the market based on new R79

→OICA, CLEPA

10. Next meeting

Date: June, 15th – 17th, 2015

15th June am + pm: ACSF Informal Meeting

16th June am + pm: ACSF Informal Meeting

17th June only am: ACSF Informal Meeting

17th June only pm: LKAS Ad-hoc Meeting (still to be confirmed by LKAS-Chair)

Venue: JASIC Tokyo Office