Discussion Points on the new ADAS Regulation

Japan

Checking the current working document and reflexing the discussion at TF-ADAS so far, we could find that there are still some points to agree and/or share common understanding clearer.
This document intend to point out these points and facilitate the discussions.

Japan is tying to propose concrete proposal for the next session of TF taking into consideration input from TF members regarding these points.

No.1 : Scope adjustment between R79 and DCAS

Common understanding between all parties

① DCAS is Level 2 system beyond R79.
② ACC+ACSF B1 = Level 2 system.
③ We have to differentiate DCAS from ACC+ACSF B1 somehow. Key point is “**beyond R79**”.

Issue

We have conceptual agreement that DCAS is “**beyond R79**” and the definition of the draft text provides “containing at least one feature, as specified under section 6 in this Regulation” (Ref. 2.1), but we don’t have common understanding what is “**superior to R79**” and what is “**deviated from R79**” on each concrete requirements.
For example, regarding ACSF B1, is Aysmax beyond 3.0m/s2 acceptable? If yes, under which condition? (Ref. 5.3.7.1.2)

Reference

2.1.
5.3.7.1.2

No.2 : Safety approach on DCAS and Annex 4

Issues

① There are some safety requirements , "*shall not cause a collision*" or "*avoid a collision*". Does these requirements require whether DCAS shall have that functionality internally by itself, or the vehicle shall have it out of DCAS, or either or both? (Ref. 5.1.5 to 5.2.2. , Annex 3 Appendix 4 3.)

② If the safety functionality shall be integrated in DCAS, consistency should be carefully checked on interpretation of "*feature*" and "*5.5.3 Activation, Deactivation, and Driver Override*", and text should be improved if necessarily. (Ref. 5.5.3)

③ In 21st TF-ADAS, "declare and verification approach" was explained regarding Annex 4. If the safety functionality shall be provided by external system from DCAS like AEBS, are some tests in Annex 4 needed as DCAS tests? (Ref. 4.2.5.2.1. to 4.2.5.2.15. of Annex 4)

④ In Annex 3 Appendix 4 3., the manufacturer shall declare the performance corresponding to "*operating domain (highway, urban, inter-urban) requirement* ". The definitions of highway, urban, and inter-urban remain "*[place holder]* " yet. The road environment differs in each country. Can we make agreement on these definitions?

Reference

5.1.5. to 5.2.2.
5.3.7.2.2.5, and 6.2.2.1.2.
5.5.3.
Annex 3 Appendix 4 3.
Annex 4 4.2.5.2.1 to 4.2.5.2.15.

No.3 : Concept of “**System boundaries**”

Common understanding between all parties

To avoid confusing the concept of “**ODD**” in ADS, we selected the terminology “System boundaries”.

Issue

① There are boundaries of the system’s intended operation domain. (Ex. Lane mark is visible.)
② The system is implemented to be active when the conditions defined by design are met. (Ex. Lane mark is detected.)
③ These two are preferable to be matched but actually not exactly same. (That the lane mark is visible for human being and that the lane mark is detectable by the system are not same.) This seems not to be common understanding in the TF.

*Ex. 5.3.1 & Annex 3 Appendix 3. “**precipitation**”*

The system won’t detect if precipitation is higher than specific value [mm/h].

*5.3.5.2.1. “**potentially relevant** boundary conditions”*

The system do operate or not, reflecting conditions. No room of “potentially relevant”.

*5.3.5.2.2. “**the system or its features remain active beyond these boundaries.**”*

The system shall stop operation when the system judged beyond boundaries.

Annex 3 Appendix 4 Para.4.1 1st “*Road event*” and 2nd columns “*Considered a system boundary…*” of the table

“Road event” expressions are in non-technical terminology. They are easy to understand but not exact to define the system operating conditions.

To distinguish ①&②, two terminologies are needed.

Reference

5.3.1, 5.3.5.2.1, 5.3.5.2.2, Annex3 Appendix3, Annex3 Appendix4 4.1

No. 4 : Approach for traffic rule compliance

Common understanding between all parties

① **Driver is responsible to comply with traffic rule. The system shall support it.**

② Traffic rule is out of UN-R scope. They are not harmonized yet. They are different on each countries or regions.

Issues

It seems to be some consensus in SDG to approach to the following traffic rule compliance.

a. Traffic rules which are generally common all over the world.
b. Traffic rules which are expected to be unchanged for future.
c. Traffic rules compliance assistance which industry can accept.

As 1st step, we have to consider whether we can agree above approach on TF-ADAS.

If we can agree, in the 2nd step, we have to discuss what rules should be into this regulation one by one.

Reference

5.3.7.1.4.1	6.2.3.2.	Annex3 Appendix 4 6.
5.3.8.2.	6.2.3.4.4.	
5.3.8.3.1.	6.2.3.5.	
6.1.1.3.	6.2.3.7.	
6.2.2.2.1.1.	6.2.3.9.	
6.2.2.3.2.1.	6.2.3.13.1.	

No.5 : ISMR

Issues

ISMR is new topic for UNR. So, we need to consider with care especially for efficient implementation, burden for stakeholders, feasibility and relationship other law.

Reference

7.2.
8.2.(c)

No.6 : CS

Issue

Complying to UN-R155 is required. (Ref. 10.2.1.) Is that really needed? Each UN-R should be independent basically.

Reference

10.2.1.

No.7 : Responsibility for vehicle operation

Issue

It should be carefully considered if requiring manufacturers something for vehicle operation may lead to infringement of proprietary rights of users.

Reference

8.1.
Annex 3 3.5.1.

No. 8 : Application of Annex 5

Issue

In 21st TF-ADAS, JRC explained that the application of Annex 5 is optional. In Para 4.2. of Annex 3 mentions that "*Simulation tool and mathematical models for verification of the safety concept **may** be used in accordance Annex 5 of this, in particular for scenarios that are difficult on a test track or in real driving conditions.*"
And Annex 5 starts from "***It is recommended that** the Modelling and Simulation (M&S) toolchain could be used for virtual testing if its credibility is established by evaluating its fitness for the intended purpose. **It is recommended that** credibility is achieved by investigating and assessing five M&S properties: …"*
If it's fully optional, this is not regulation requirement but just guideline. If not, what's applicable of Annex5? (What level / kind of design calculation)

Reference

Annex 3 4.2, Annex 5 1.1