

**DRAFT Report****23rd meeting of the GRVA informal working group on  
Automatically Commanded Steering Function (ACSF)**

Venues: Brussels (Belgium), Centre Borschette (Tue/Wed) & Charlemagne building (Thu)

Chairmen: Mr. Hiroshi Morimoto (Japan) and Mr. Christian Theis (Germany)

Secretariat: Mr. Rudolf Gerlach (TÜV Rheinland)

Duration of the sessions:

Tuesday, 30. July 2019: starting at 1:30 p.m.

Thursday, 01. August 2019: ending at 5:00 p.m.

**1. Welcome and Introduction**

The Chairman (Mr. Morimoto) opens the session, excused the Co-Chair Mr. Theis for not being able to attend the meeting and thanks the European Commission for hosting the meeting.

**Chair:**

explained the WP.29 framework document on automated/autonomous vehicles [WP29-178-10](#)

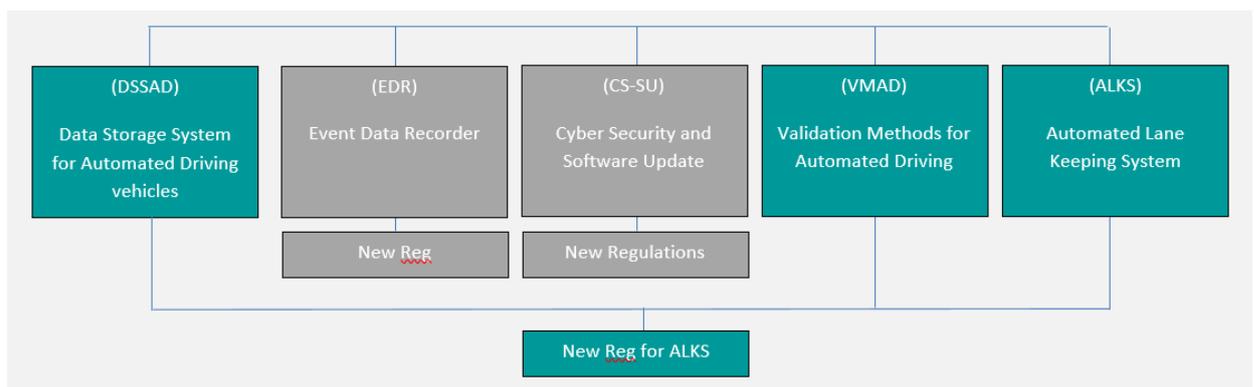
He declared that ACSF will continue, however, moving on from ACSF to a new Functional requirements group (FRAV). It has been confirmed that ACSF will continue to work on Functional requirements for Lane Keeping systems of SAE levels 3/4 until March 2020.

**Key information related to ACSF and parallel VMAD Activities:**

- This group will submit an informal document to GRVA Feb 2020 session and then formal document to WP.29 in March 2020. This is the target timeline.
- Test track methods will be developed by ACSF group. New and innovative methods will be dealt with by VMAD.
- VMAD will handle CEL Annex. Not ACSF, this is important.

**Germany:** China, USA and Germany will be the co-chairs. The first session could be held on the Monday before the GRVA meeting. Then they plan to have a 2 or 3 day meeting in October for FRAV.

**Chair:** How will all of the pieces of the work, across the different groups, going to be brought together? Co-ordinated through GRVA. Understanding is that to realise ALKS Regulation the following IWG's need to deliver their output into the Regulation:



## 2. Approval of the agenda

Document: ACSF-23-03r1 (Chair) Draft Agenda of the 23rd session  
Agenda adopted with no changes.

## 3. Adoption of the report of the 22nd meeting of the IWG on ACSF

Document: ACSF-22-11 - (Secretary) Draft Report 22nd session  
Draft minutes approved.

## 4. Discussion on functional requirements for ALKS

Documents: ACSF-23-02 (SDG) Base document\_for\_low\_speed\_ALKS  
ACSF-23-06 (Republic of Korea)\_comments on the Base\_document\_for\_low\_speed\_ALKS-Final\_Draft\_from\_SDG\_2019-07-01  
ACSF-23-07 (Republic of Korea)\_Minimum Following Distance to the front  
ACSF-23-08 (Republic of Korea)\_Criteria\_for\_deeming\_Driver\_availability  
ACSF-23-09 (France) Comments on Base\_document\_for\_low\_speed\_ALKS-Final\_Draft\_from\_SDG\_2019-07-01  
ACSF-23-12 (Germany) ALKS\_Deactivation

The discussion based on document ACSF-23-02 the results of the meeting are reflected in ACSF-23-02r3.

### ACSF-23-02 (SDG) Base document\_for\_low\_speed\_ALKS

#### Paragraph 2.1 Discussion regarding minimum performance level of the system

**Chair:** based on current text one system might work up to 60km/h, one at 40km/h for example. Are we ok with this? Two possible scenarios:

- Under normal condition ALKS operates up to 60km/h.
- Under environmental conditions the system reduces the max speed that it can operate within.

**NL:** Under the second point the speed would be limited under environmental conditions but the vehicle does not necessarily transition back. The alternative was that the vehicle would try and reach a higher speed and therefore would transition back if its vision was insufficient to support higher speed.

**UK:** How do we know that the system is accurately calculating its sensor range? As an alternative to the above the sensor capability under all conditions would need to be capable of operating at 60km/h.

**Japan:** Discussion regarding the 46m sensor range requirement in 2.5.6.1. Para 2.5.6.3. says that this performance should not reduce due to wear/ageing of the sensor. However, para 2.5.6.2. permits a reduction in sensor range due to weather conditions.

**Chair:** the speed range can be moved to the general requirements, rather than the scope. This was discussed at ACSF 22. This can be done later.

*To be decided: at what time will the speed range be moved into the general requirements sections?*

#### When do we transfer this text into a Regulatory format

**EU Comm:** when and how do we transfer this text into a Regulation?

**Chair:** the work of DSSAD, VMAD and ACSF needs to merge. Should be discussed at September GRVA.

**EU Comm:** thought that VMAD will work on the test track methods for ALKS.

**Chair:** he has discussed with co-chair of VMAD and the understanding is that conventional track testing will be developed by ACSF IWG. However, first functional requirements must be confirmed as the top priority.

*To be decided: when to transfer the Regulation into a draft Regulation format*

### **Paragraph 2.4.3. Definitions of Severe ALKS vs Vehicle Failure**

**OICA:** introduced the definitions of severe ALKS failure vs severe vehicle failure. This is to be read in conjunction with paragraph 2.7.3.

### **Discussion regarding German alternative proposal on ALKS speed setting**

**Korea:** set speed is in contradiction to other definition section in 2.1 (Scope).

**Chair:** are these definitions still required for low speed?

**Germany:** set speeds are more relevant for higher speeds where the driver can set the system speeds to 100km/h or 130km/h for example. Are we comfortable for the system to have a set speed for ALKS? No real preference at this stage.

**Secretary:** the user may want to prevent hard accelerating and braking and therefore limit the speed of the system.

**UK:** think the text is relevant regardless of low speed or high speed. It makes sense to design the regulation for anticipating higher speed implementation.

**UK:** suggest deleting 'operates under current environmental and sensor conditions' – is this intended to mean that the system will limit its operating speed in accordance with the environmental conditions that the sensing system is exposed to?

### **Paragraph 2.3. Implementing safe strategies**

**OICA:** This section was re-introduced.

**Chair:** what does 'until the detection is completed' mean?

**EU Comm:** perhaps 2.3.1. could be split into 2 parts; normal operation and failure conditions. In addition what do we mean by safe strategies?

**OICA:** Until the system knows everything is working it must either restrict the speed of operation, not permit the activation of the system etc.

**Chair:** Para 2.7.2.3. details transition demand. Other paragraphs define what to do when there is a system failure.

**Japan:** first part is to detect, the second part is to keep the vehicle safe whilst this detection is being verified. 'and/or' – Japan suggest remove 'or'.

**UK:** suggestion offered for rewording regarding 2.3.1.

**EU Comm:** do not have to cover all scenario's under the general requirement. I.e: activation of the system is covered elsewhere.

**France:** suggest adding in the word 'relevant' before 'traffic rules'. This is because it should be the rules related with the function.

**Chair:** thought the word applicable covers this part.

**EU Comm:** suggest adding some wording unless the only way to avoid an accident is to disregard the traffic rules.

**UK:** Singapore have drafted text in relation to instances when traffic rules may not be adhered to, this could text could be used as a basis for this part.

**UK:** this relates to a WP1 issue. This group is a technical group setting technical requirements, therefore it seems suitable that WP1 identify when rules of the road do not need to be adhered to.

**EU Comm:** suggest we provide some alternative to WP1, otherwise it will difficult to reach a conclusion.

**CLEPA:** In the example that the recognition of the highway speed limit cannot be determined this is a system failure. Therefore the system should transition back to the driver.

#### **Paragraph 2.4 Activation and deactivation of ALKS (manually – with driver input)**

**EU Comm:** the title needs some work.

**UK:** Some drafting comments from the UK.

2.4.4. assumed that this is in relation to having a dedicated ‘ALKS’ button and the method of manual deactivation.

**EU Comm:** all conditions have to be met under 2.4.3. – just wanted to check the text is clear.

**Japan:** discussion regarding last bullet point. This will be discussed with the sensor performance section.

**EU Comm:** is there a system readiness indicated to the driver? EU Comm suggest that the activation list is presented first and then the Reg says that ‘the system shall become active only upon deliberate action of the driver’ because this is the sequence that allows activation of the system.

#### **Referencing correct operation of DSSAD before ALKS can be activated**

**Korea:** suggest adding another bullet point; DSSAD is operating normally. If there is a failure in DSSAD then ALKS will not be permitted.

**RDW:** ALKS can operate safely without DSSAD therefore the current text does not cover it. Agree with Korea.

**Japan:** How do you check the function of DSSAD? Not sure if this is possible.

**OICA:** DSSAD should be able to define the operating conditions/failures.

**EU Comm:** agree with Korea.

*There seems general agreement to include the correct functioning of DSSAD before ALKS can be activated.*

#### **Paragraph 2.4.4. Manual deactivation by deliberate means (via a button/switch/control)**

**OICA:** deliberate action needs to be classified as intentional vs unintentional. Para 2.4.4. is about the button concept. This is not about adding inputs to braking or steering; this is under 2.4.5.

**EU Comm:** What happens on deactivation; the vehicle should issue a transition demand?

**OICA:** no this was not the intention.

**UK:** think we need to be more specific if we are referring to a button/switch, this could be read as a brake or steering input. Also share the same concern as EU Comm, when manual deactivation is completed shouldn't the driver monitoring confirm that the driver is ready to take control by having their eyes directed on the road ahead.

**OICA:** You deactivate it by the same means to activate it; therefore it cannot be activated/deactivated via the brakes or steering.

**Chair:** the understanding is common – just need to get the text ready to make it clear.

**UK:** suggest the use of the term dedicated control, use of the word ‘control’ is consistent with R121.

*There seems general agreement to clarify 2.4.4. to make it clear that this is via a button/switch/control. The term dedicated control was suggested. The word dedicated differentiates it from a multi –functional control defined in R121.*

## ACSF-23-12 (Germany) ALKS\_Deactivation

### **Case 0: Deactivation via the control; no transition demand is issued. System is instantly deactivated.**

**UK:** would like to have positive confirmation of the driver monitoring system that the driver has eyes on the road ahead for [3] secs before the driver can deactivate. Why would you not use the driver monitoring?

**EU Comm:** share the views of the UK. Would like some confirmation that the driver is in control. Either by gaze direction or hands on the steering control. Think 2 inputs rather than one would be more robust from a safety perspective.

**Germany:** In this case the driver is deciding via the control. The deactivation must be safe. Maybe a compromise is to include a phase out or like a transition demand so that the driver is supported in the best way.

**OICA:** Understand the concern is that the driver unintentionally deactivates the feature. Industry is unhappy about adding requirements for DM into manual deactivation. These requirements might be more difficult to define than you imagine. If the driver has added polarised sunglasses you cannot get a positive confirmation of eyes on the road so the deactivation method is the control that will operate. (In this scenario would the system issue a TD). There may be scenarios other than looking at the road ahead that are sufficient ie: engine warning lamp and looking in the instrument cluster.

**EU Comm:** 2 different types of actions would be recommended, not just holding the button for a period of time.

**OICA:** What if the driver is looking ahead, then checking the mirrors (so not on the road ahead).

**UK:** want to minimise the risk of unintentional deactivation. Dedicated controls (2 are suggested that are pressed simultaneously) accessible to the driver whilst the hands are on the steering wheel would help to increase safety.

**OICA:** is it really necessary to have 2 buttons simultaneously pressed? Does it really have to be 2 controls?

**EU Comm:** positive confirmation that the driver has hold of the steering wheel. (This is one input). Why not issue a TD to ensure that the driver is back in control?

**France:** more in favour of 2 separate actions where one is confirmation that the driver has the hands on the steering wheel.

### **Case 1: Deactivation with/without previous transition demand (in conjunction with paragraph 2.4.8.)**

**CLEPA:** if there is a wish by the driver to take back manual control this should be allowed by input to the steering control.

**EU Comm:** Agreed with override concept.

**EU Comm:** the driver can deactivate the system by manual or via a system override (steering, braking, acceleration). On steering, braking or acceleration is a TD issued to the driver?

**OICA:** Longitudinal control override should initiate a TD. In comparison when overriding the system by inputting into lateral control the driver already has hands on the steering control.

**Germany:** is it correct that the second input is not longitudinal control?

**OICA:** It is not the intentional to have a double press of the accelerator / brake to override.

**Japan:** positive confirmation of driver monitoring should be defined.

**Germany:** Can OICA provide some text to confirm ours and Japan's understanding of 'positive confirmation'.

**OICA:** The slides indicate that a steering input is required as a second action under braking. This is not the intention of the text and is the main difference between the German understanding.

**OICA:** Para 2.7 states any acc or braking input immediately initiates a transition demand. During input to the brake or accelerator (the system reacts) but a TD is issued where ALKS continues to operate (para 2.7) until confirmation is received that the driver is back in control.

**EU Comm:** what happens during the TD – is the system fully active, is acceleration of the vehicle permitted?

#### **Is hands on detection a requirement?**

**UK:** why is hands on detection not required for override?

**OICA:** the text has been drafted so that a number of options can be used. If hands on detection must be detected then if the system fails you cannot override. This is not a good safety scenario.

**Chair:** if a fault is detected then a TD is issued anyway?

**UK:** can we have a transition period to allow confirmation that the single input to the steering was intended?

**OICA:** suggest that the assistance systems are still engaged to support the driver whilst the confirmation of the intentional vs unintentional steering system input is determined.

### **ACSF-23-02 (SDG) Base document\_for\_low\_speed\_ALKS**

#### **2.4.5. Title of section 2.4.5. – potential confusion**

**OICA:** maybe the term automatic deactivation is not the correct term, this was raised yesterday by EU Comm. The override leads to the automatic deactivation so maybe 2.4.5. and 2.4.8. should be swapped in order.

**Korea:** suggest adding in a further bullet point to acknowledge that a MRM will automatically deactivate the ALKS.

**OICA:** suggest retitling 2.4.5. to Automatic deactivation ‘due to driver input’.

**Korea:** agree with OICA proposal to clarify the MRM situation.

*Agreement to retitle 2.4.5. to ensure that it is clear the action is due to driver input.*

#### **Grey text in paragraph 2.4.5.:**

**NL:** in the grey section want to request the addition of driver monitoring.

**Japan:** the paragraph in grey is recommended to be ‘shall’ rather than ‘may’ by Japan.

**OICA:** would recommend the ‘may’. The system would be allowed to deactivate under this condition but it is not forced to. It is important to note that the text in grey a TD is already in progress. Whereas in the bullet points no TD is in place.

**OICA:** in the grey section there may be other conditions that permit the TD to end. If we make the sentence ‘shall’ there are no other possibilities.

**NL:** reiterated would like some driver monitoring in 2.4.5.; the grey text.

**Germany:** generally a TD should be ended with 2 inputs.

**EU Comm:** we need to consider the driver actions vs the system actions that lead to deactivation.

**OICA:** do not want drivers to be confused therefore have not split out the cases driver actions vs system actions.

**France & UK:** would also support having driver monitoring as part of the requirement.

**OICA:** the first 3 bullet points we seem to have a way forward. The grey text when a TD is issued we need a way forward. Shall we split TD vs no TD as previously mentioned so that we can have different criteria?

**France:** Shall the grey text be included in para 2.7.4. to avoid confusion.

**OICA:** If driver monitoring is introduced is the 1s holding the control still required.

**Chair:** think 1s is not required if 2 positive confirmations have been confirmed.

**Action:** *Industry to present revised text based on discussion of 2.4.5.*

## **Steering Override leading to deactivation**

**Germany:** for steering override Germany would like to have 2 inputs to deactivate the system, not just input to steering alone. This is the main difference from the current draft text and Germany presentation. (reference case 1 from German presentation)

**Japan:** can support single input into steering to override the system. Otherwise in the case where 2 inputs are required and no input is given to the acc/braking control the ALKS will continue the TD until an MRM is initiated.

**NL:** Question to Japan – what is the threshold on the steering Japan require for automatic deactivation?

**Chair:** it has to be above a certain threshold, not just hold the wheel/control.

**Japan:** Para 2.4.7. automatic deactivation shall be indicated to the driver – clear info must be given to the driver.

**OICA:** if we force the system to remain active

**Germany:** 2.4.8.1. indicates what could be acceptable for possible thresholds. Germany want to use these thresholds as a justification for a second input to automatically deactivate the system.

**OICA:** have concerns that driver inputs steering, is not looking at the road and the vehicle continues longitudinal control.

**UK:** has the same understanding as Germany, a TD is issued on the input of steering and then a further confirmation should be required.

**OICA:**

*‘one option to resolve this issue is to add to the second bullet point the driver overrides the system by steering and is holding the steering wheel and this ....’*

## **Adding driver monitoring as a condition for deactivation**

**Japan:** When a TD is issued, if we add driver monitoring as a requirement and the driver wears sunglasses the TD cannot be finished. Therefore the vehicle will issue an MRM in this situation and this should be avoided.

**EU Comm:** manual deactivation (via the button) can be completed.

**Chair:** yes this is true but not desirable.

**OICA:** we could add an option, put the hands to the wheel to hold the wheel for [1]s or use the driver monitoring.

**CLEPA:** If the driver monitoring recognises that the DM is wearing sunglasses then other attributes in the DM are available ie: position of the head, body etc to confirm driver availability through driver monitoring.

**Chair:** we can cover this by the current text – this is the chair's suggestion.

**CLEPA:** I can take this away to discuss with experts how to confirm driver availability via latest technology.

**UK:** discussion was had in the break about the driver monitoring system and using this to set thresholds related to acceptable steering override levels.

**CLEPA suggest that the UK provides details on what aspects they do not understand on driver monitoring so that CLEPA can prepare.**

## **2.4.6. What support shall the driver get from the assistance system?**

What about the following systems:

- ACC
- LKAS etc

Assume from the definition that these are not permitted to still be active? Although LKAS the driver is intended to be hands on, there could be some confusion with regards this point.

**Korea:** ACC system is not allowed by current text.

**OICA:** 2<sup>nd</sup> paragraph in grey is an industry wish to replace 2.4.6., acknowledged it contradicts the first paragraph.

**OICA:** Mode awareness is key here.

**RDW:** ACSF B1, ACSF C, longitudinal control should be off. AEBS etc can/must be active if a mandated system.

**Japan:** HMI is very important. However, it is not sufficient. Driver should operate steering and brake/acc at least once before allowing support.

**OICA (BMW):** research has shown ALKS to assisted vs level 2 vs level 0 drivers respond better when supported. This is safer.

**Chair:** could this data be provided?

*OICA to supply research/data to show driver reactions to resuming control of the vehicle when supported vs non supported*

### **What speed does ACC resume at after a TD if it is permitted?**

**UK:** what speed should be set for ACC after a TD if this support system were to be allowed?

**OICA:** open to discuss this.

**Chair:** does the 3rd paragraph supports this?

**OICA:** it doesn't fully address this point. This is more about respecting speed limits.

Need to first gain agreement if supported systems are permitted after review of OICA data. Then if permitted the speed threshold of ACC needs to be considered.

### **Activation of lights, wipers etc when in automated mode**

**France:** suggest adding that if its raining the wipers are turned on, if its dark the headlights are on. This is supported in their proposal listed in [ACSF-23-09](#).

**Germany:** not just for deactivation but also during the automated driving task.

**OICA:** a valid concern. The camera needs to be clear so the wipers will need to be on.

**UK:** suggest adding text to identify areas of control (expand upon the list by France)

*General agreement to support the inclusion of this principal – the text needs to be proposed for activation of lights, wipers etc in automated mode.*

**UK:** Supportive of the German text for 2.4.6.

### **Paragraph 2.4.8.1. setting thresholds for force and duration**

Who determines that force and duration? From the definition this shall be the OEM to the TS. There is no format given, what is a suitable level of detail? Must all different conditions be declared?

**UK and Germany:** regards 2.4.8.1. some questions raised

### **Paragraph 2.4.8.5. ignoring all driver input**

The driver input may be permanently ignored – this is a new item and goes against the original discussion. Concerns raised by CP's. How to determine if the system can cope with all dynamic driving tasks.

### **Paragraph 2.4.9.**

ALKS may use different strategies regarding deactivation and override in the case of a severe vehicle or severe ALKS failure. The assumption is that the TS will assess these strategies for their suitability – in practice this is hard to do.

### **Paragraph 2.5.3.2. Minimum stopping distances**

Korea introduces a new minimum following distance.

#### **ACSF-23-07 (Republic of Korea)\_Minimum Following Distance to the front**

**OICA:** we agree to the approach. OICA have a suggestion to add this in the table format to the regulation (and not use the equation).

**Korea:** have a concern with OICA proposal. Korea proposal with equation can be used for full speed ALKS. German and OICA proposal is unclear because there is no time gap outside of 10km/h step (ie: what about 5km/h). Therefore is difficult to judge what should be applied in between the values in the table down to zero.

**OICA:** understand the concerns of Korea. Could be solved by linear interpolation between the points. However, it's ok for OICA to have it as a formula.

**Chair:** suggest using table and supported by the formula.

**Japan:** Where do the values in the table come from?

**OICA:** the tables from Korea original proposal ACSF 22-09 were used. Time gap was calculated from the minimum stopping distance presented.

**Chair:** Korea proposal now has a shorter distance from this information at low speed – why did you do that?

**Korea:** ACSF 22-09 rev 1 has a reduced braking distance particularly at low speed.

**UK:** The graph developed by Korea the lower limit gives an issue in UK traffic for minimum distance.

**Chair:** the UK raised concern about low speed stopping distance – it doesn't fit their traffic code.

**Korea:** this is the safety braking distance from the ego vehicle.

**UK:** the key is the relative speed. Industry is content with the previous safety values (it's their presentation) so can we accept the previous values with the greater safety margin?

**Japan:** can agree the UK proposal and see their concerns.

**OICA:** who is against the red curve? (Previous OICA/German proposal)

**Korea:** the red line is too much safety margin.

**Chair:** where do the red curve values come from?

**Korea:** these numbers are the SDG base document numbers (the table).

**OICA:** The red numbers (in the SDG document text inserted by OICA) is calculated from Korea's document ACSF 22-09.

**Chair:** no objections – ok lets take the red curve values (previous values) as currently written in the text.

#### ***Minimum stopping distances in 2.5.3.2. to be clarified after ROK comments***

### **Paragraph 2.5.6. Sensing system**

This part of the document was not reviewed in any detail and needs to be reviewed at the next meeting.

**France:** AEBS (Although driver assistance vs automation) has some requirements for sensing range that could be used.

**UK/Germany:** Rather than just stating 46m recommend adding the formula back in. When high speed systems become available the text is future proofed.

### **Paragraph 2.5.7. Maximum operating speed of ALKS**

**Chair:** would like to confirm the meaning of the alternative text from Germany.

**Germany:** our intention was not to substitute the entire paragraph 2.5.7. with the text from Germany. However, it was to add to the text.

## **Paragraph 2.6 Driver availability**

A lot of discussion on this point.

Think about adding some parts to the automatic deactivation section in 2.4.5.

**UK:** suggest selecting 2 out of the 5 points, not a single criterion.

The system should monitor the road ahead under all driving conditions.

**Korea:** have a proposal to amend the times in bullets 2, 3 and 5 via the Korean presentation ACSF-23-08

**UK:** some concerns with 15s warning then TD starts, this leads to a long time in total.

### **What is the difference between driver monitoring and driver availability?**

**Japan:** what is the difference between driver availability and driver monitoring system? We have no definition for driver monitoring?

**Germany:** Driver monitoring is a part of the driver availability system.

**Japan:** There are several systems for driver availability. One method is a camera to observe the drivers movement. However, other methods are allowed. If driver monitoring (camera) is a part of driver availability recognition system then the meaning of driver availability is changed. Do we need to change the definition of driver availability recognition system in the text?

**OICA:** driver availability is a list of requirements, it is not a system. There are conditions that can be achieved without a camera. The driver monitoring systems are not defined. How to define looking at the road ahead? Is it ok to check the mirrors momentarily before? This would need to be defined.

**Germany:** if the steering input threshold is defined and linked to a driver monitoring requirement (gaze direction example) then this could be a compromise – as required in para 2.4.5.

**UK:** understanding from yesterday during a steering override the system is fighting the driver. Vehicle Longitudinal control with manual steering is not desired by industry. Why can't we include driver monitoring in automatic deactivation?

**OICA:** doesn't want to be trapped in automated mode just because driver monitoring cannot be verified (ie: polarised sunglasses). The system must have other options available to it. If we force the system to remain active whilst the driver manually overrides what do we do with the longitudinal control? This is a scenario we do not want to have to design for when it is not necessary.

### **Justification for the times presented in 2.6.2.1. ACSF-23-08 by Korea**

Korea have looked at the criteria in 2.6.2.1. to try and value if the numbers are suitable. The result of the presentation is to amend the numbers presented.

**OICA:** For the first two conditions they are close to OICA's proposals. So OICA request to keep the values as proposed.

Regarding the 2<sup>nd</sup> point I'm not sure that the study by Korea is representative of driving in an ALKS mode – this study was done by drowsy drivers driving manually. The proposal reads that

the driver cannot close eyes for any more than 4 seconds. This would force to have eyes open all the time. Previously we had a study in Japan that confirmed how quickly people fall asleep.

**Chair:** OICA mention the first 2 conditions confirm their study – can we see that study?

**OICA:** these values are a result of various OEM’s development experience, so it is not a single study. We have not previously presented anything.

**Chair:** if you can provide data/evidence for these numbers this would be helpful to understand the appropriate numbers to set.

**Chair:** we need further evidence to justify the numbers.

**Germany:** first comment to this list – we are not sure if driver talking should be acceptable in this list. How can you distinguish the radio, other passengers? So we think not appropriate; recommendation is to remove from the list.

**Korea:** support German comments.

**UK:** support the German comments. The other item is ‘at least one of the following’ – we think it needs to be more robust by measuring more than one item.

**OICA:** acknowledge that the conditions are quite diverse. It says one of the following because if you have a camera you can this can detect multiple things. For some drivers it is not possible to monitor the eyes so other options are available. Otherwise you prevent these users from using the system.

**NL:** It should be a requirement within 4 to 10 seconds that the driver is in a position to drive. (ie: feet in the footwell, not on the dashboard).

**Chair:** can Netherlands provide some text for this?

**NL:** Yes

**Action:** *NL to provide text to address their point in 2.6.2.1.*

### **Justification for the times presented in 2.6.2.1. by Industry**

**OICA:** stated that they will probably not be able to provide more information regarding the times in their proposal than already presented in Paris in presentation ACSF-19-04.

**NL:** the open method of allowing the TS to determine is like a non-requirement because there are no specifics. Also the text has to be ready for the 1998 agreement to so will need to be specific.

**OICA:** The list of items in 2.6.2.1. is about human behaviours detection. Korean colleagues have confirmed some of the values. There is one major exception which needs some consideration which is “condition 5”.

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**Korea:** Korean evidence is the evidence provided for the ACSF group. Therefore would like to request that the numbers in square bracket are changed to the values proposed by Korea.

**Action:** *industry to share insights into the data behind the numbers in 2.6.2.1. and CP’s to take this decision later on.*

### **Definitions of conscious head/body movement**

**OICA:** we have a definition of conscious head/body movement.

**UK:** where are these?

**OICA:** They were in the document – however, they have not been copied across.

**Action:** *OICA to send text to re insert definitions of conscious head/body movement.*

## **Continuous monitoring of the driver to confirm their availability – where do the industry proposed times come from?**

**Germany:** we are aiming for a continuous monitoring. This should be achieved by several measures. The OEM and TS should have some criteria to determine what is acceptable. Multiple measures should be taken into account in order to achieve this.

**France:** FR would like some confirmation that the system will continuously monitor **ALL** parameters in the list.

**Chair:** it is not currently written like this.

**OICA:** there is an incentive for the OEM to use as many of the options as possible. If you only evaluated one item from the list then the system is not very mature/intelligent.

**France:** how can you confirm if none of the parameters are met if you are not monitoring them all?

**OICA:** if the system doesn't monitor then the items are not confirmed (no positive confirmation will be returned) and a TD will be issued more frequently.

**France:** Suggest removing the text 'latest when the driver does not ...] – it creates confusion.

**UK:** The existing text doesn't seem sufficiently robust. The button press in 180 seconds + a further 15 seconds is not particularly robust.

**Chair:** the purpose of this paragraph is to introduce robustness. One method is to be very specific about a list. The second approach is to be very open (allow flexibility to the TS and OEM). We have to wait for further insight before determining which direction to take.

### **Paragraph 2.7.4.1. Vehicle vs ALKS failure**

**OICA:** Introduced the changes under 2.7.4.1. We are looking at 2 types of failures:

- Vehicle failure (also affecting the vehicle in manually driven mode)
- ALKS failure
- The definitions for the above 2 are given in 2.2.12.

You may want to start the MRM right away. What exceptions might be needed to allow this for severe vehicle and ALKS failure.

**NL:** the principle can agree. But the wording in 2.2.12. should be defined better. A simple sensor failure should not be classed as a severe vehicle failure.

**Germany:** happy for MRM to be initiated.

**UK:** also happy with MRM initiation. Maybe R121 high level warning (red indicator) could be used as a basis for severe failure.

**5.1** When used on optical indicators or tell-tales, the following colours have the meanings indicated:

- red: danger to persons or very serious damage to equipment, immediate or imminent;

### **Paragraph 2.8. HMI**

**OICA:** CP's were requesting a standardised icon.

**UK:** clear one unique symbol should be required. Vehicle with the auto symbol would be content with that. Request the need for standardisation.

**OICA:** agree the need for escalation in urgency. Is it wise to start out as yellow? (2.8.2.1. and 2.8.2.2.) industry were keen to keep the warnings as per B1.

**Japan:** what about the alternative paragraph?

**OICA:** delete 2.8.2.1. to 2.8.2.1. with the alternative is the suggestion.

**UK:** the red hands on the steering wheel should be during the TD, not at the start of the MRM. However, the yellow warning is not needed.

*Size and colour requirements probably needs redrafting. 2.8.1. needs to be reviewed and standardised.*

## 5. Information on testing requirements for ALKS

Documents: ACSF-23-05 (Germany) ALKS Testing requirements  
ACSF-23-04 (Industry) CEL Annex for ALKS - industry proposal

### ACSF-23-05 (Germany) ALKS Testing requirements

Proposal for amending the list of tests (based on ACSF-23-02)

This document was introduced, however, due to timing it was not reviewed in any detail.

The main broad categories for testing are:

- Lane Keeping Functionality Test
- Following Distance Test:
- Blocked Lane Test:
- Deceleration Tests
- Maximum Operational Speed Test
- Transition Phase Test

The ACSF IWG will develop this further.

**Germany:** request to develop the test cases on track. Rather than hand over to VMAD who are not familiar with ALKS requirements.

**Chair:** has had a conversation with the co-chair of VMAD it is expected that ACSF will complete this task as suggested by Germany. Also Annex CEL will be completed by VMAD Group. ACSF 22-04 should be submitted to VMAD group.

## 6. Information on DSSAD for ALKS (report 1<sup>st</sup> meeting of IWG EDR/DSSAD)

Documents: [EDR-DSSAD-01-11](#)

**Chair:** DSSAD is dealt with in the IWG on EDR/DSSAD

The document was not reviewed.

## 7. Other business

Documents: ACSF-23-10 (Industry) HCV statement v1

Not applicable

## 8. List of action items

Topic	Action Point
<b>Discussion regarding minimum performance level of the system</b>	To be decided: at what time will the speed range be moved into the general requirements sections?
<b>General format of the document</b>	To be decided: when to transfer the Regulation into a draft Regulation format
<b>DSSAD and ALKS activation</b>	There seems general agreement to include the correct functioning of DSSAD before ALKS can be activated.
<b>Activation and deactivation of ALKS (manually – with driver input)</b>	There seems general agreement to clarify 2.4.4. to make it clear that this is via a button/switch/control. The term dedicated control was suggested. The word dedicated differentiates it from a multi – functional control defined in R121.
<b>Agreement to retitle 2.4.5. to ensure that it is clear the action is due to driver input.</b>	This was completed in the meeting by OICA.
<b>Conditions for manual deactivation</b>	OICA to present revised text based on discussion of 2.4.5.
<b>Driver Monitoring – understanding current technologies and capabilities of systems</b>	CLEPA suggest that the UK provides details on what aspects they do not understand on driver monitoring so that CLEPA can prepare.
<b>After ALKS is deactivated (either manually or automatically) should the driver still be supported with ADAS systems?</b>	OICA to supply research/data to show driver reactions to resuming control of the vehicle when supported vs non supported
<b>Activation of other systems (lighting, windscreen wipers etc) while in automated mode</b>	General agreement to support the inclusion of this principal – the text needs to be proposed for activation of lights, wipers etc in automated mode.
<b>Minimum Stopping distances</b>	Minimum stopping distances in 2.5.3.2. to be clarified after ROK comments
<b>Conditions for considering when the driver is available</b>	NL to provide text to address their point in 2.6.2.1. It should be a requirement within 4 to 10 seconds that the driver is in a position to drive. (ie: feet in the footwell, not on the dashboard).
<b>Conditions for considering when the driver is available</b>	OICA to share insights into the data behind the numbers in 2.6.2.1. and CP's to take this decision later on.
<b>Definitions of conscious head/body movement</b>	OICA to send text to re insert definitions of conscious head/body movement.
<b>HMI</b>	Size and colour requirements probably needs redrafting. 2.8.1. needs to be reviewed and standardised.

## 9. Schedule for further meetings

24 <sup>th</sup> Meeting	<b>24th meeting of the IWG on ACSF</b> Week starting with 18th of November – 20 <sup>th</sup> November. Idiada will host in Barcelona close to city centre.
25 <sup>th</sup> Meeting	<b>25th meeting of the IWG on ACSF</b> Week starting with 20 <sup>th</sup> of January 2020. Place tbd

Responsible for the notes:

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