

**List of open issues**

Topic	Sub-topic	Open issue(s)	Positions	Possible solution(s) and conclusions	Status	Text proposal	Reference
	1. How to regulate vehicle behaviour in nominal/complex situations?	Current approach in UN R 157 for <b>minimum headway/safety distance</b> appropriate?	(JP)The table should not be deleted because the requirement like "the vehicle shall not cause collision" is ambiguous and considered differently between TSs, and the minimum requirements for important parameters are effective in order to ensure safety. Without table, there is some concern for approval of ADS with substandard level. <del>Therefore, minimum headway/safety distance should be decided in a same manner as &lt;60km/h.</del> <b>Japan is discussing internally the concrete value. Japan will provide proposal at the following SIG.</b> Notwithstanding this requirement, appropriate following distance for complying other requirements (e.g. traffic rules, avoid collisions) should be maintained.	New approach: generic requirement based on traffic rules, amendment table, preventing collision, RSS, 2 seconds, etc.?	TBD		
		Current approach in UN R 157 for <b>minimum detection range</b> appropriate?	(JP)Minum detection range should not be deleted and should be decided in a same manner as <60km/h. (Distance after 0.5s and 3.7m/s <sup>2</sup> deceleration.) <b>Japan supports the value proposed by Sweden (R157-03-04).</b>		TBD		
		How should the <b>speed limit</b> , which varies in each country, be treated under the Regulation? (JP)	(JP)No need to modify UNR157 text because compliance to speed limit is covered by "traffic rule requirement".		TBD		
		No negative effect of the safety distance on traffic flow (EC)	(JP) <b>It is premature to implement this requirement because there are few vehicles with ADS in the market.</b>		TBD		

	Line between type approval/traffic rules (JP: Are there any cases where following traffic law could cause danger? If so, how should we treat those cases in regulation)	(JP) This issue cannot be dealt with WP29 since vehicle regulation/guideline cannot permit vehicle to break traffic rules. This issue should be considered in WP1.  Before reaching any conclusion from the discussion above, we propose to keep the provision of "the activated system shall comply with traffic rules" in 5.2.1.		TBD		
2. Expected reaction of the vehicle to critical situations	Any differences with ALKS low speed which need particular consideration?			TBD		
	<b>Cut in scenarios</b> as defined currently in UN R 157 appropriate for higher speeds (> 60 km/h)?	(JP)Scenarios should be added considering the speed range extension. If some CPs propose to change the requirement completely (e.g. EC proposal), that proposal should be discussed firstly in FRAV.		TBD		

Speed increase

<p>To what level should <b>pedestrian crossing</b> be covered? (it could be difficult to avoid a collision in a high-speed area but what should be the level required under the Regulation?) (JP)</p>	<p>(JP)Collision to a pedestrian in the same lane shall be avoided. ADS should avoid collision in front of the ego vehicle as safe as a human driver. If necessary, we can accept to discuss amendments to current test procedure from the point of view above. <b>Japan is discussing internally the case in which a pedestrian is standing beside the lane. Japan will provide proposal at the following SIG.</b></p>		<p>TBD</p>		<p>5.2.4. The activated system shall be able to bring the vehicle to a complete stop behind a stationary vehicle, a stationary road user or a blocked lane of travel to avoid a collision. This shall be ensured up to the maximum operational speed of the system.</p> <p>(EC)5.2.4. The activated system shall be able to handle in a safe way the presence in the same lane of <del>bring the vehicle to a complete stop behind</del> a stationary vehicle, a stationary road user , a passable or unpassable obstacle [debris, lost cargo, etc.], or a blocked lane of travel to avoid a collision. This shall be ensured up to the maximum operational speed of the system.</p> <p>(EC)5.2.5. The activated system shall detect the risk of collision in particular with another road user ahead or beside the vehicle, due to a decelerating lead vehicle, a cutting in vehicle, <b>a vehicle proceeding in the opposite</b></p>
<p>Is it necessary to consider situations where <b>lane marking is not visible</b>?</p>	<p>(JP)No need to modify UNR157 text because it is obvious that the vehicle should keep control until the transition to the driver even if the lane marking is disappeared suddenly. (During MRM, the case when the lane marking is not visible is already described (5.5.1.))</p>		<p>TBD</p>		<p>5.4.4.1. In case the driver is not responding to a transition demand by deactivating the system (either as described in paragraph 6.2.4. or 6.2.5.), a minimum risk manoeuvre shall be started, earliest 10 s after the start of the transition demand.</p>
<p><b>Is evasive emergency manoeuvre required?</b> Distinction &lt; 80 km/h and above?</p>	<p>(JP)The function of evasive emergency manoeuvre should be optional (i.e. not mandatory but may be fitted). If the function of evasive emergency manoeuvre is fitted, it is necessary that the function can only be activated when the braking is not capable of avoiding accidents.</p>		<p>TBD</p>		

<p>During evasive emergency manoeuvre, <b>is it permitted to cross lane marking?</b></p>	<p>(JP)The function of evasive emergency manoeuvre should be optional (i.e. not mandatory but may be fitted). If the function of evasive emergency manoeuvre is fitted, it is necessary that the function can only be activated when the braking is not capable of avoiding accidents.</p>		<p>TBD</p>		
<p>Is it required to react appropriately to "<b>wrong way driver</b>"?</p>	<p>(JP) The ADS shall detect the risk of "wrong way driver" and perform appropriate manoeuvres to minimize risks. (support EC proposal.)  "Appropriate manoeuvre" should be as safe as or better than competent and careful human driver.</p> <p>EC proposal to change "bring the vehicle to a complete stop" to "be able to handle in a safe way" seems not appropriate since this modification seems to change the requirement into less stringent way.</p> <p>Japan proposes to keep the original requirement of 5.2.4 as it is, and add additional paragraph requiring the issues that should be handled in a safe way.</p>		<p>TBD</p>		<p>5.2.4. The activated system shall be able to bring the vehicle to a complete stop behind a stationary vehicle, a stationary road user or a blocked lane of travel to avoid a collision. This shall be ensured up to the maximum operational speed of the system.</p> <p>(EC)5.2.4. The activated system shall be able to handle in a safe way the presence in the same lane of <del>bring the vehicle to a complete stop</del> behind a stationary vehicle, a stationary road user, a passable or unpassable obstacle [debris, lost cargo, etc.], or a blocked lane of travel to avoid a collision. This shall be ensured up to the maximum operational speed of the system.</p> <p>(EC)5.2.5. The activated system shall detect the risk of collision in particular with another road user ahead or beside the vehicle, due to a decelerating lead vehicle, a cutting in vehicle, a <b>vehicle proceeding in the opposite direction</b> or a suddenly appearing obstacle and shall automatically perform appropriate manoeuvres to minimize risks to <del>safety of the vehicle occupants and</del></p>
<p>Shall <b>different types of lane change</b> be defined (nominal, during MRM and evasive)?</p>	<p>(JP) "during MRM", "evasive manoeuvre", "regular lane change" should be clearly differentiated. (see UNR157-02-05)</p>		<p>TBD</p>		

Lane change

<p>What are the items that need to be strengthened when compared to ACSF category C?</p>	<p>(JP)[REGULAR] Lv3 Lane change during normal driving (not emergency situation) should consider the situation around the ego vehicle including forward and side (including 2 lane next). These requirements should be discussed in FRAV. (note: Detection of forward and side are not required in ACSF provisions.) [MRM] The requirements for Lange change during MRM should be discussed based on ACSF category C (can be based on category E but the requirements are not yet specified). [EVASIVE] The requirements for evasive manoeuvre is difficult to define because the impact of secondary accident (i.e. collision to vehicle passing the next lane) should be considered. The function of evasive emergency manoeuvre should be optional (i.e. not mandatory but may be fitted). If the function of evasive emergency manoeuvre is fitted, it is necessary that the function can only be activated when the braking is not capable of avoiding accidents.</p>		TBD		
<p>Should criteria for permitting lane change be defined? If so, what should be the criteria?</p>	<p>(JP) See above.</p>		TBD		
<p>Need to <b>define what is a safe lane change</b> (parameters or general principles?)</p>	<p>(JP) See above.</p>		TBD		
<p>Need to define triggering conditions for lane change. Should aim to prevent erratic lane change. (NO)</p>	<p>(JP) See above.</p>		TBD		
<p>Shall driver interruption (over ride) during auto lane change be acceptable? What kind of action should be required for override during auto lane change? (JP)</p>	<p>(JP)No special modification to present text is needed.</p>		TBD		
<p>Is there any other additional requirement necessary for the Level 3 lane change function? (JP)</p>			TBD		

		Is it necessary to decide a <b>minimum detection range for directions other than forward</b> (side, diagonal)? (JP)	(JP) The requirement of MRM lane change can refer the requirement of risk mitigation function (RMF), which is under discussion in ADAS-TF. Regarding regular lane change, the requirement should be discussed in FRAV.		TBD		
Both	1. Traffic situations	Any <b>additional traffic situations</b> which need particular attention and possibly need to be introduced? (based on VMAD input)			TBD		
	2. MRM	During MRM, is it acceptable to stop within the lane? Or <b>should lane change to the shoulder (lane change during MRM) be mandatory?</b> (JP)	(JP)Having the function to change lane to the shoulder (lane change during MRM) should be mandatory for ADS with ODD higher than 60km/h because a stopped vehicle in highway without traffic jam is dangerous. (It is important to have the function of MRM lane change and it can be allowed that MRM lane change is not achieved under some conditions (e.g. when shoulder does not exist).)		TBD		
	3. HMI	Any change/improvement to current <b>HMI requirement</b> given that more time will be spent without any intervention from the driver? Further harmonization needed?	(JP) We do not see any necessity to change the current requirement at this time. However, we should reflect conclusion coming from FRAV and VMAD if any.		TBD		
	4. Test, Audit & In-service monitoring	During Type Approval, what type of tests should be conducted or provided by the documentation? ( <b>Should current requirement be further clarified?</b> ) (JP)	(JP) We do not see any necessity to change the current requirement at this time. However, we should reflect conclusion coming from VMAD if any.		TBD		
		Need to improve present test, especially <b>track tests</b> ?	(JP) We do not see any necessity to change the current requirement at this time. However, we should reflect conclusion coming from VMAD if any.		TBD		

		Does the <b>audit and in-service</b> monitoring need enhanced?	(JP) We do not see any necessity to change the current requirement at this time. However, we should reflect conclusion coming from VMAD if any.		TBD		
Clarifying Regulation	1. Emergency vehicles	How should a vehicle respond? Is it with transition demand or shall it create a corridor?			TBD		
		Does the system need to react to the direction of an <b>enforcement officer</b> ? (UK)			TBD		
	2. Detectable collision	What is a detectable collision? (UK)			TBD		
Other modifications	1. Appendix3 to Annex4	Should Appendix 3 to Annex4 be replaced?	(JP)Current Appendix3 to Annex4 is important to assess the human driver level. Therefore, Japan suggests to keep current Appendix3 with amendment (e.g. speed extension). If other CP requests to add other requirement, we can discuss to add it as other Appendix or something else.		TBD		
		What are the items that need to be changed from M1? (JP)			TBD		
		Influence of vehicle dynamics for safety distance to the front/detection range.			TBD		
		Current requirements applicable to M1 are limiting the maximum deceleration during the MRM to 4m/s <sup>2</sup> ; should this value be adapted to other vehicle categories, given the lower deceleration potential of heavier categories compared to passenger cars?	(JP) 4m/s <sup>2</sup> can be acceptable because no safety concern has been observed. (However, buses with standing passengers should require additional consideration.)		TBD		UNR-157-02-10(OICACLEPA) ALKS for HDV - Preliminary responses to GRVA-09-34.pdf

<p>HDV ALKS below 60 km/h*</p>	<p>The requirements define a table with the minimum following distance between a passenger car equipped with an active ALKS and the preceding vehicle. Industry is expected to review whether and how the HCVs parameters impacts the values in the table.</p>	<p>(JP)Minimum following distance should be calculated by the same method as M1 by useing HDV parameters(the distance with maximum deceleration).</p>		TBD		<p>UNR-157-02-10(OICACLEPA) ALKS for HDV - Preliminary responses to GRVA-09-34.pdf</p>
	<p>Minimum forward detection range for HDV</p>	<p>(JP)The same requirements as M1 can be acceptable.</p>		TBD		
	<p>In the section about the cutting-in scenario, should the parameter "TTCLaneIntrusion" be modified, considering the width of HDVs compared to a passenger car?</p>	<p>(JP)No need to modify UNR157.</p>		TBD		<p>UNR-157-02-10(OICACLEPA) ALKS for HDV - Preliminary responses to GRVA-09-34.pdf</p>
	<p>Effect of the trailer.</p>			TBD		