

5.3.	Interactions between users and ADS	
5.3.1.	General requirements	
5.3.1.1.	<p>At each initiation of the powertrain Following a new ignition cycle the ADS shall signal the presence of a failure that prevents or limits the operation of a feature. The ADS shall signal the presence of any failure that limits the operation of an available feature.</p>	<p>Possibly move to 5.3.2 and new 5.3.3 with appropriate wording. Not appropriate as a general requirement in current wording.</p> <p>UK: This issue resolves down to whether we want constant notification of a failure or only on request for activation of that feature. It doesn't seem like there is an objective correct answer to this between balancing annoying the user and proving them with information to avoid confusion.</p> <p>Would a compromise solution be that a failure that limits or prevents operation should be indicated when the initial engine startup takes place (and when the user attempts to activate it)? The requirement would then be:</p> <p>5.3.1.1. Following a new ignition cycle the ADS shall signal the presence of a failure that prevents or limits the operation of a feature.</p> <p>OICA: Propose to delete this requirement.</p> <p>Justification: This would then apply to the section 5.3.2.4 covering ADS features that do not allow manual control of the DDT. There cannot be a general expectation on passenger to act on failures We have 5.3.2.4.2. The ADS vehicle shall provide safety-related information to the passengers.</p>

		<p>Which is safety relevant and adaptable to the use cases, hence 5.3.1.1 can be deleted from the general section</p> <p>(UK) proposal for amendment “prevents or limits” (OICA) change “any” to “a” failure since it would be one or more failures at a time. Want to exclude “prevents”: ADS is something in a vehicle that can be activated. Want to limit information to driver (avoid overload) so principle only to provide information as needed. (Germany) Support inclusion of “prevents or limits”. Informing user of failure important. (UK) Without “prevents”, it would mean feature not available so no signal at all (e.g., feature available signal). Support including “prevents”. (France) Support principle on information load but support Germany, UK positions. Keep “prevents”. (Canada) Support including “prevents”. (OICA) “prevent an available feature” mutually exclusive (logical flaw). (Chair) Green based on broad support in IWG. Industry can come back with justification for alternate wording.</p> <p>The ADS shall signal the presence of a failure that [prevents or] limits the operation of a feature that is within its ODD.¹</p>
<p>5.3.1.2. The ADS shall signal its intention to place the vehicle in an MRC to the ADS user(s).</p>		

¹ Industry: “prevents or” not needed. No clear safety purpose.

<p>5.3.1.3. An ADS that controls the operation of doors shall provide an emergency override to the user.</p>		
<p>5.3.1.4. The ADS HMI shall provide safety relevant information and signals clearly noticeable to the target user(s) under all operating conditions, multimodal (e.g., optical, acoustic, haptic) if needed, simply and unambiguously.</p>		
<p>5.3.2. ADS features that allow a user to take over manual control of the DDT</p>		
<p>5.3.2.1. General requirements</p>		
<p>5.3.2.1.1. The ADS shall be designed to prevent misuse and errors in operation by the user.</p>		
<p>5.3.2.1.2. When the ADS is active, the vehicle driving controls, direct vision, devices for indirect vision, indicators, tell-tales, and DDT-related warnings may be disabled, suppressed, de-activated, inhibited or by other means made unavailable, as needed to mitigate the risk of errors in operation, misuse and reduce ambiguous states of vehicle control.</p>		<p>UK (Suggestion based on FADS/AVRS work): “When the ADS is active, the vehicle driving controls, direct vision, devices for indirect vision, indicators, tell-tales, and DDT-related warnings may be disabled, suppressed, de-activated, inhibited or by other means made unavailable, as needed to mitigate the risk of errors in operation, misuse and reduce ambiguous states of vehicle control.”</p> <p>Text for the interpretation document: <i>‘Direct vision’ includes, but is not limited to, the forward field of view and the functioning of demisting and defrosting systems</i></p> <p>Justification: Vision topics are added. Also, it is not necessary to restrict when these various items may be disabled - it might be legitimate to disable these things for aesthetic, ergonomic, aerodynamic, etc reasons</p>

5.3.2.1.3. The vehicle controls dedicated to the ADS shall be clearly identified and distinguishable to accommodate only the appropriate interactions. ²		
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² Through size, form, location, colour, type, action, spacing and/or control shape. The provision aims to promote correct use and is not intended to prohibit multifunction controls.

<p>5.3.2.1.4. While an ADS feature is active, it shall inform the user of:</p> <ul style="list-style-type: none">(a) ADS status information.(b) The role of the fallback user, if applicable.(c) Adapted performance of the DDT consequent to some failure of the ADS that limits the operation of an available feature.	<p>(OPI) Open issue with regards to system status (active, standby, on/off, engaged/disengaged).</p>	
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<p>5.3.2.1.5. The ADS shall indicate the availability of a feature for activation.</p>		
<p>5.3.2.1.6. While active, features that have a system-initiated deactivation of the ADS to a fallback user shall:</p> <ul style="list-style-type: none"> (a) Continuously assess through a user-monitoring system whether the fallback user is available and in a position to assume the role of driver at the end of the deactivation procedure (b) Provide effective procedures for re-engaging the fallback user who has been detected not to be available. (c) Trigger a fallback to an MRC where it has not been possible, feasible and/or safe to re-engage the fallback user. 	<p>(OPI) Proposal to amend the wording. (Secy) neutrality issue: “user-monitoring system” prescribes an additional system separate from the ADS and the proposal does not provide objective performance specifications for this system. To ensure neutrality, the proposal should provide performance requirements with a justification explaining how the requirements address the identified safety risk(s). The means to fulfil the requirements should be left to the manufacturer’s discretion.</p>	
<p>5.3.2.2. Requirements on ADS feature activation</p>		
<p>5.3.2.2.1. The ADS shall ensure a safe ADS feature activation.</p>		
<p>5.3.2.2.2. The ADS shall provide immediate prompt feedback to indicate success or failure when the user attempts to enable an ADS feature.</p>	<p>(OPI) Proposal to replace “prompt” by “immediate”.</p>	
<p>5.3.2.2.3. The feature activation process (e.g., sequence of actions and states) shall take into account relevant recommendations or standards.</p>		
<p>5.3.2.2.4. An ADS feature activation resulting in a user becoming a fallback user shall immediately and explicitly inform the fallback user of the consequent</p>	<p>(OPI) Proposal to introduce new wording.</p>	

<p>expectations on them to be ready to respond to a request to resume the DDT.</p>	<p>(OICA) oppose additions of “immediately and explicitly”: Many solutions for addressing aim. For example, step-by-step process. (France) agree with OICA on “immediately”. Step-by-step would be explicit. (UK) “immediately” commonly understood across regulations (to be nonzero). (ITU) discussion seems to assume user never has knowledge, experience (so needs all messages every time), annoying (France) Could have multiple users of vehicle, fleet vehicle, etc. where user(s) might or might not be knowledgeable. (OICA) acknowledge “immediate” has value. Decision: “immediately and explicitly” accepted.</p> <p>(UK) “be ready to take back control” message. Intent to be more precise about short, targeted information. (OICA) agree short message (not extensive, comprehensive explanation), if understood this way, then acceptable. (chair) explicitly refers to the DDT clause.</p>	
<p>5.3.2.3. Requirements on ADS feature deactivation to manual driving</p>		

<p>5.3.2.3.1. A system-initiated deactivation in nominal situations shall be indicated in a timely manner to support the fallback user re-engaging to the driving task; [Where appropriate,] the process (e.g., timing, levels of warnings) [shall/may] take into account be adapted according to the current circumstances (e.g., the engagement of the fallback user, the status of the ADS and vehicle, the current road traffic situation).</p>	<p>(OPI) Consolidates wording of several paragraphs in the guidelines to combine all deactivation requirements and remove duplication and misalignment between the sections.</p>	
<p>5.3.2.3.2 Following the user requesting deactivation of the ADS, the ADS shall follow a deactivation process to safely transfer control of the DDT to the user.</p>		
<p>5.3.2.3.1.1 The ADS shall only allow respond to the user request to initiate a system deactivation process, if the ADS verifies that the user is in a position to assume the role of the driver.</p>		
<p>5.3.2.3.1.2 ADS feature deactivation may be delayed if it is assessed by the ADS that the situation is unsuitable or unsafe for the subsequent mode of vehicle operation. In this case, the user shall be informed of this circumstance.</p>		<p>There has been pervious discussion of “may” vs. “shall”.</p>
<p>5.3.2.3.2. The ADS shall only allow the user to initiate a system deactivation process if the ADS verifies that the user is in a position to resume the role of the driver.</p>		<p><i>Now 5.3.2.3.1.1</i></p>

<p>5.3.2.3.4. The ADS shall remain active until the system deactivation process has been completed or the ADS vehicle reaches a minimal risk condition.</p>	<p>(OPI) Proposal to introduce new wording. (Secy) Subjectivity: what objective criteria would constitute “in control”?</p>	
<p>5.3.2.3.4. ADS feature deactivation may be delayed if it is assessed by the ADS that the situation is unsuitable or unsafe for the subsequent mode of vehicle operation. In this case, the user shall be informed of this circumstance (e.g., due to the current situation being unsuitable or unsafe for the subsequent mode of operation)</p>	<p>(OPI) Proposal to introduce new wording and delete “e.g.” example.</p>	<p><i>Now 5.3.2.3.1.2</i></p>
<p>5.3.2.3.5. The user initiated system deactivation process (e.g., sequence of actions and states) shall take into account relevant recommendations or standards.</p>	<p>(OPI) Delete words.</p>	
<p>5.3.2.3.6. The ADS shall assess if the user is suitably engaged to resume the DDT before completion of the deactivation process.</p>		<p><i>Discuss “engaged” in an interpretation document</i></p>
<p>5.3.2.3.7. The ADS shall provide a specific indication of the completion of the deactivation of the ADS.</p>		
<p>5.3.2.3.8. At the completion of the deactivation process, control shall be returned to the driver without any continuous lateral or longitudinal control assistance active.</p>	<p>(OPI) Delete footnote.</p>	
<p>5.3.2.3.9. If applicable, during the deactivation procedure, the vehicle controls, direct vision, devices for indirect vision, indicators, warnings, and tell-tales shall</p>		

<p>be set to an appropriate state for manual driving.</p>		
<p>5.3.2.3.10. If applicable, ADS features operating control of closures shall no longer influence closures or the controls associated with closures.</p>		
<p>5.3.3 ADS features that do not allow a user to take manual control of the DDT</p> <p>Note: Provisions renumbered below</p>		
<p>5.3.3.1 The ADS shall provide the passenger(s) with means to request to stop the vehicle.</p>		
<p>5.3.3.2 The ADS vehicle shall provide safety-related information to the passengers.</p>		
<p>5.3.3.3 The ADS shall not initiate motion unless the safety risks to the passenger(s) have been mitigated.</p>		
<p>5.3.2.4.4. The ADS may provide the user(s) with information related to ongoing operations (e.g., destination, upcoming stops, route progress).</p>		
<p>5.3.3.4 Controls provided for manual driving (e.g., steering, service brake, parking brake, accelerator, lighting) shall be designed to prevent any effect on the DDT whilst the ADS is performing the DDT, or reasonable safeguards shall be put in place to prevent access to controls.</p>		<p>Is this in the right place, i.e. should it be under 5.3.2.4?</p> <p>Yes in the right place</p>