

**Consolidated working draft text for the ADS GTR and UN Regulation**

The following table provides:

- In the first column, the reference used to draft the proposed text;
- In the second column, the proposed regulatory text in which the track changes outline the modification compared to the GRVA-19-15r1e (Guidelines and recommendations for ADS safety requirements, assessments and test methods to inform regulatory development);
- In the third column, proposals for revision and comments
- In the fourth column, session discussion and/or outcomes of the session.

Reference (GRVA-19-15r1e)	Proposed text (track changes refers to the GRVA-19-15r1e)	Proposals and comments	Session discussion and outcomes
			<p><b>Feedback from 3<sup>rd</sup> IWG ADS: (<i>Manufacturer vs ADS</i>)</b>, we can have requirements targeting the manufacturer if the provision is made to ensure the safety of the product</p> <p><b>Outcome from ISMR sessions:</b> 1) The final draft shall be checked to ensure the consistency in the use of:  - 'ADS safety', 'safety of the ADS', "ADS vehicle" and "ADS on public roads and in  - safety case vs validation of performance</p>
	<b>Definitions</b>		
NEW	<i>"Event" means any situation happening in a given time and location.</i>	OPI: proposal for new definition	<b>Outcome from ISMR sessions:</b> to be further discussed
NEW	<i>"Safety-relevant event" means an event which is relevant for the evaluation of the safe operation of the ADS Vehicle. These events also include normal operation which are relevant to argument specific ADS design choices and/or the safety case. (e.g., fallback user unavailability, MRM)</i>	OPI: proposal for new definition	<b>Outcome from ISMR sessions:</b> to be further discussed

	<p>3.22  <del>“Occurrence” means a safety-relevant event involving an ADS vehicle.</del></p> <p><b>“Occurrence” means a Safety-relevant event during which at least one of the following criteria is fulfilled:</b></p> <p><b>a) Collision involving the ADS vehicle</b>  <b>b) ADS vehicle system/component failure</b>  <b>c) ADS vehicle produces a noncompliance with respect to the requirements of this regulation</b></p>	OPI: proposal for new definition	<b>Outcome from ISMR sessions:</b> to be further discussed
	<p>3.22.1  <del>“Non-critical Occurrence” means occurrences which are not “Critical Occurrences”, covering an operational interruption, defect, fault, or other circumstance that influenced or may have influenced ADS safety but did not result in a collision or serious incident.</del></p> <p><b>“Non-critical Occurrence” means occurrences which are not “Critical Occurrences”</b></p>	OPI: proposal for new definition	<b>Outcome from ISMR sessions:</b> to be further discussed
	<p>3.22.2  <del>“Critical Occurrence” means an occurrence during which at least one of the following criteria is fulfilled:</del></p> <p><del>(a) at least one person suffers an injury that requires medical attention or dies as a result of being in the vehicle or being involved in the event.</del></p> <p><del>(b) the ADS vehicle, other vehicles or stationary objects sustain physical damage that exceeds a certain threshold.</del></p> <p><del>(c) any vehicle involved in the event experiences an airbag deployment.</del></p> <p><b>“Critical Occurrence” means an occurrence during which at least one of the following criteria is fulfilled:</b></p> <p><b>(a) at least one person suffers an injury that requires medical attention or dies as a result of being in the vehicle or being involved in the event.</b></p> <p><b>(b) the ADS vehicle, other vehicles or stationary objects sustain physical damage that exceeds a certain threshold.</b></p> <p><b>(c) any vehicle involved in the event experiences a deployment of any non reversible restraint system</b></p>	OPI: proposal for new definition	<b>Outcome from ISMR sessions:</b> to be further discussed  Threshold should be defined
	<b>General Requirement</b>		
Section 8	<b>4.5 In service monitoring and reporting</b>		

8.1.7.	4.5.1 The ISMR of the Manufacturers shall ensure the ADS's safety throughout the lifetime of the ADS.	<b>Secy:</b> proposal to rephrase as follow: <i>This Regulation establishes requirements to ensure safety throughout the useful life of the ADS vehicle. These requirements include [list of relevant subsections with cross-references].</i>	
8.1.9.	4.5.1.1 The Manufacturer shall put in place a fleet monitoring mechanism to collect information from the ADS vehicle in accordance with the requirement listed in the 5.7.2:		
8.1.9.	<b>a)</b> <b>GTR:</b> to confirm the safety case and confirm the validation carried out by the manufacturer before market introduction.  <b>UNR:</b> to confirm the safety case and confirm the validation carried out by the manufacturer before the granting of the approval		
8.1.10.	<b>b)</b> to enable the identification of unreasonable risks related to the use of an ADS on public roads and the evaluation of its safety performance during real-world operation.	<b>OPI:</b> Industry: a clear link must be made with the safety performance chapter	
8.2.6.	<b>c)</b> to enable the identification of unanticipated situations, hazards, and risks <i>that lead to unexpected behavior of the ADS.</i> <i>This information shall be assessed and where appropriate used to develop new or revise existing scenarios derived from ISMR activities.</i>	<b>OPI:</b> There is no agreement on the second sentence. It can be potentially removed because the same concept is already included in the monitoring section. However, this sentence gives a clear indication that ISMR activities support the development/revision of scenarios.	<b>Feedback from 3<sup>rd</sup> IWG ADS:</b> the open item "Scenario characterization from ISMR data" is postponed to 2025 or moved in the interpretation document  <b>Outcome from ISMR sessions:</b> the following new open Item is added: <i>"ISMR scenarios library and how to use such scenarios"</i>
8.2.7.	4.5.1.2		

**Commented [RE(1): (Secy):**  
1. Is "feedback loop" the same as ISMR?  
2. "Safety argument" undefined. Current definitions include to "safety concept" and "safety case".  
3. Is "validation" the same as "safety assessment" (e.g., para. 4.4.)?

**Commented [RE(2R1): OPI:**  
1) Text modified to take into account the comments from the secretary.  
2) Text modified to take into account the comments from the secretary.  
3) There are differences in these 2 activities e validation includes the compliance to the requirements/the performance of the ADS while the safety case ensure that the system is free from unreasonable risk.

	The manufacturer shall put in place a reporting mechanism in accordance with the requirement listed in the 5.7.3:		
8.1.6	a) To collect, analyse the safety-relevant information related to its in-service ADS' operation that identifies situations which fall into the cases specified for short term and periodic reporting.		<p><b>Outcome from ISMR sessions:</b>                  Open Item, this point (others as well) is linked to Annex 10 of GRVA-19-15r1e "Consideration of data recording under ISMR and the activities of the EDR/DSSAD informal group"</p> <p><b>Outcome from ISMR sessions:</b>                  Open Item, Relevant Authority</p>
8.2.7.	a) that allows information from the ISMR and recommendations from its analysis to be shared with the relevant authority.		<p><b>Outcome from ISMR sessions:</b>                  Open Item, Relevant Authority</p>
8.5.1.11.1. 8.5.1.11.2.	4.5.1.3 The manufacturer shall also have a mechanisms for receiving and analyzing safety relevant feedback and reports from other sources, in accordance with the requirement listed in the 5.7.2, to complement the data collected from ADS vehicles.	OPI: the text is agreed in principles. However there is an open item related to the data collected from other sources	<p><b>Outcome from ISMR sessions:</b> :                  All the contracting parties are in favor of making this provision as mandatory requirement, while the Industry is not in favor of mandating a mechanism for receiving reports from other sources</p>
Section	<b>Requirements/Specifications</b>		
	<b>5.7 In service monitoring and reporting</b>		
8.4	<b>5.7.1 ISMR Processes</b>		<p><b>Outcome from ISMR session:</b> The 5.7.1 is moved to the SMS section</p>
8.4.1.	Before the deployment of the ADS,		

**Commented [RE(3)]:** Industry proposal:  
 1. Defining relevant authority would help identify the right items and information to be reported. Eg: TAA, HNTSA etc.  
 2. Helps define harmonised way of reporting to the identified authorities.  
 3. Avoids confusion and duplication  
 4. helps maintain confidentiality as reports might contain several IP related info.

	the manufacturer should establish processes to demonstrate its capabilities to execute an effective ISMR.		
8.2.2.	5.7.1.2 The ISMR processes shall address the following three main objectives: (a) — Identify safety risks related to ADS performance that need to be addressed in the frame of the SMS activities, including instances of non-compliance with ADS safety requirements; (b) — Support the development of new or revise existing scenarios through capturing information when the ADS does not perform safely in unanticipated situations (c) — Share information and recommendations to promote continuous improvement of ADS safety performance.		
8.4.1.	These processes should be part of the SMS of the manufacturer.		
8.4.2., 5.9.1., 5.9.2., 5.9.3.	The processes for ISMR should demonstrate the capabilities: (a) — To monitor critical and non-critical occurrences caused by the ADS; (b) — To manage potential safety-relevant gaps during the in-service operation and to update those vehicles ; (c) — To perform event investigation (d) — To report safety relevant occurrences to the authority when they occur; (e) — To confirm the compliance with the defined safety case (f) — To share learnings derived from occurrence analysis; (g) — To contribute to the continuous improvement of automotive safety		<b>Outcome from ISMR sessions:</b> The near misses analysis is deleted due to the lack of an agreed, harmonized and quantifiable definition of near miss
NEW_1		<b>New requirement from UK proposal</b>  <i>UK: The manufacturer shall have processes that demonstrate the capabilities for handling the reports received from other sources, including distinguishing false reports from</i>	

		<i>actual events and conducting thorough investigations when necessary.</i>	
8.4.3.	The manufacturer should define appropriate Key Performance Indicators (KPI) to measure the effectiveness of ISMR activities for the ADS operations.		
8.5.1.	<b>5.7.2 In-Service Monitoring</b>		
	The monitoring of the ADS performance is intended: (a) — To provide evidence of in-service safety performance of the ADS; (b) — To identify a drift or deviation from the demonstrated performance including the ones that end in an occurrence.		<b>Outcome from ISMR sessions:</b> the requirements was deleted because already included in the general requirements
8.5.1.1.	5.7.2.1 The manufacturer shall monitor the performance of all its in-service ADS vehicles.		<b>Outcome from ISMR sessions:</b> this text was a note in the integration document that we decided to translate in requirements
8.5.1.1.	5.7.2.2 The manufacturer shall collect and analyze vehicle data, and data from other sources to achieve the ISMR objectives.		<b>Outcome from ISMR sessions:</b> : All the contracting parties are in favor of making this provision as mandatory requirement, while the Industry is not in favor of mandating a mechanism for receiving reports from other sources
8.5.1.2.	5.7.2.3 The manufacturer shall have a data acquisition strategy, data retention strategy, data access, and security and protection policy.		<b>Outcome from ISMR sessions:</b> Open Item related to EDR/DSSAD alignment (retention requirements, survivability)
8.5.1.3.	5.7.2.3.1 The data acquisition strategy shall ensure a representative collection of data to monitor the ADS in service performance.		
8.5.1.4.	5.7.2.3.2 The retention strategy shall ensure that data related to a detected safety issue is		<b>Outcome from ISMR sessions:</b> Open Item related to EDR/DSSAD

**Commented [RE(4)]:** Industry proposal:  
 Manufacturer cannot be made responsible for data from other sources due to privacy (eg GDPR) and other regulations preventing such data to be collected and mapped.  
 Moreover, such data that is not available to the OEMs cannot be guaranteed to be reliable, in-time and hence this requirement should be sourced by the relevant directly from the other sources

	retained until any necessary corrective action and review processes are complete		alignment (retention requirements, survivability)
8.5.1.4.	5.7.2.3.2.1 In addition, the strategy shall ensure the retention of the data for longer-term trend analysis (i.e. subset of the collected data).		
8.5.1.5.	5.7.2.3.3 The data access, security and protection policies shall ensure that information access is allowed only to authorized persons and contains safeguards to ensure the security and protection of the data in accordance with the Data Protection laws of the relevant jurisdiction.		<b>Outcome from ISMR sessions:</b> Open Item related to EDR/DSSAD alignment (retention requirements, survivability)
8.5.1.6.	5.7.2.4 The manufacturer shall achieve the following objectives from the monitoring activity: (a) Verify the safety performance (i.e., Safety Performance Indicators) and confirm the in-service safety level of the system (i.e. metrics and thresholds) (b) Identify areas of operational risk (c) Identify when the ADS prevents incidents/accidents (e.g., MRC fallbacks, collision avoidance, emergency maneuvers); (d) Characterize and analyze occurrences; (e) Discover trends that suggest the emergence of unacceptable risks; (f) Ensure that remedial action are put in place when an unacceptable risk is discovered or predicted by trends; (g) Confirm the effectiveness of any remedial action. (h) Enabling the development of new or the revision existing scenarios derived from ISMR activities	<b>OPI:</b> Industry: a clear link must be made with the safety performance chapter	<b>Feedback from 3<sup>rd</sup> IWG ADS:</b> the open item “ <i>Scenario characterization from ISMR data</i> ” is postponed to 2025 or moved in the interpretation document  <b>Outcome from ISMR sessions:</b> the following new open Item is added: “ <i>ISMR scenarios library and how to use such scenarios</i> ”
8.5.1.7.	5.7.2.5 The manufacturer shall perform a data analysis with sufficient frequency so that remedial action can be taken promptly and in line with reporting requirements.		
8.5.1.8.	5.7.2.5.1 <i>The analysis techniques shall include at least the following:</i> (a) Routine measurements: a selection of parameters shall be collected to characterize the performance of ADS and to allow a comparative analysis. These measurements shall aim at identifying and monitoring emerging trends and tendencies before the trigger levels associated with exceedances are reached.	<b>OPI:</b> Industry reserved the possibility to provide a revised text	<b>Outcome from ISMR session:</b> The near misses analysis is deleted due to the lack of an agreed, harmonized and quantifiable definition of near miss

	<p>(b) Exceedance detection: a set of core" value" shall be selected to cover the main areas of interest for the ADS operation with aim at searching for deviations from safety performance and limits. They shall be continuously reviewed to reflect the current operations.</p> <p>(c) Occurrence analysis: It shall be possible to characterise and investigate all the occurrences listed in the occurrence list (ref. X.x) using the recorded data.</p> <p>(d) Statistics: Data Series shall be collected to support the analysis process with additional information. These data shall provide information to generate rate and trends.</p>		
NEW	<p>5.7.2.6. The manufacturer shall have a mechanisms in place for receiving feedback and analyze safety relevant feedback and reports from other sources to extract safety-relevant information and to review the safety monitoring data.</p>		<p><b>Outcome from ISMR sessions:</b> All the contracting parties are in favor of making this provision as mandatory requirement, while the Industry is not in favor of mandating a mechanism for receiving reports from other sources</p>
NEW	<p>5.7.2.6.1 The feedback and reports from other sources shall include but not limited to:</p> <ul style="list-style-type: none"> <li>• ADS related maintenance and inspection feedback</li> <li>• Public feedback (including through a helpline, web page, social media and other sources)</li> <li>• Enforcers (including the police) and other authorities' reports</li> <li>• Service operator, customer and dealer feedback</li> </ul>		<p><b>Outcome from ISMR sessions:</b> All the contracting parties are in favor of making this provision as mandatory requirement, while the Industry is not in favor of mandating a mechanism for receiving reports from other sources</p>
8.5.1.9.	<p><del>5.7.2.7</del> The data monitoring programme shall identify KPIs to assure that the monitoring is performing at an optimal level, and address any issue affecting the effectiveness of the monitoring program</p>		<p><b>Outcome from ISMR sessions:</b> we can delete because it will be included in the SMS</p>
8.5.1.12.2	<p>5.7.2.8 The manufacturer shall evaluate the results from the monitoring activity to assess:</p> <p>(a) In-service safety performance;</p> <p>(b) The adequacy of the metrics and thresholds;</p>		<p><b>OPI:</b> Open Item, this point is linked to Annex 10 of GRVA-19-15r1e (<i>Relationship between In-Service</i></p>



	(c) The outcome of remedial actions		<i>Monitoring and Reporting (ISMR) and the behavioural competencies demonstrated during the original ADS assessment)</i>
8.5.2.2.	<b>5.7.3.Reporting by the manufacturer</b>		
	5.7.3.1 The manufacturer shall provide evidence of the in-service safety performance of the ADS and confirmatory evidence of the audit results of the Safety Management System		<b>Outcome from ISMR sessions:</b> this requirement is deleted and combined with the next one
8.5.2.2.1. and	5.7.3.1 The manufacturer shall report, as required by the relevant Authority, on the in-service safety performance of the ADS vehicle and provide confirmatory evidence of the audit results of the Safety Management System		<b>OPI:</b> As required by the relevant authority means that there is a degree of flexibility which requires discussion and agreement during the assessment
8.5.2.5.3.	5.7.3.2. The reporting shall be carried out according to the laws applicable in each contracting party and according to the information available to the manufacturers		<b>OPI:</b> Requirement to be checked in accordance with discussion on reporting templates
8.5.2.4.5.	5.7.3.2.2 The manufacturer shall report on occurrences/[safety-relevant] events when, at least, one of the following is fulfilled: <ul style="list-style-type: none"> <li>the ADS was active when the ADS vehicle was involved in the occurrence/[safety-relevant events]</li> <li>The ADS was active up to 30 seconds prior to the ADS vehicle experiencing the occurrence/[safety-relevant events].</li> </ul>	<b>OPI:</b> there is disagreement on the seconds bullets.	<b>OPI:</b> this information shall be shared with the DSSAD group to ensure there is a buffer for the recorded data  <b>ITU:</b> 30 seconds too low for situational awareness assessment
8.5.2.2.2.	5.7.3.4 The manufacturer shall report on short term basis for safety-relevant events and/or occurrences that they may require the manufacturer to take remedial action. The manufacturer shall report on short term basis for the following occurrences: <ol style="list-style-type: none"> <li>Indications of failure to meet requirements;</li> <li>Critical occurrences, known to the manufacturer, where the ADS was involved</li> <li>Other occurrences listed in X;</li> <li>Other performance issues constituting an unreasonable risk to safety.</li> </ol>		

8.5.2.2.2.	5.7.3.4.1 The short term reporting shall include: (a) — Indications of failure to meet requirements; (b) — Critical occurrences where the ADS was involved known to the manufacturer and other occurrences listed in X; (c) — Other performance issues constituting an unreasonable risk to safety.		
8.5.2.5.5.			
8.5.2.2.3	5.7.3.5 The manufacturer shall issue a short-term report within 30 days from the knowledge of the matter.		
8.5.2.4.4.			
8.5.2.4.3			
8.5.2.2.3	5.7.3.5 The manufacturer shall notify the relevant Authority as soon as practical without unreasonable delay and issue a short term report within 30 days from the knowledge of the matter. 5.7.3.6 The manufacturer shall notify the relevant Authority of a critical occurrence without unreasonable delay <b>but no later than [24/48] hours after becoming aware of it.</b>	OPI: to decide whether to introduce a prescribed maximum duration for the initial notification	
8.5.2.4.4.			
8.5.2.4.3.			
NEW_1	5.7.3.5.1 The initial notification may be limited to high-level data (e.g., location, time, type of accident)		
8.5.2.5.4.	5.7.3.6 The manufacturer shall report in accordance to the short term template in Annex X, as required by the relevant Authority, following the occurrences flagged under the “Short term reporting” in Y.		OPI: To be revisited when finalizing requirements on the templates. Requirement & Wording is agreed. OPI: Open Item, this point is linked to Annex 10 of GRVA-19-15r1e “Consideration of ISMR templates and reporting from other stakeholders.”

8.5.2.5.6.	5.7.3.6 .1 The information reported in the short term template shall remain confidential.		<b>OPI:</b> Open Item, this requirement target the authority and need to be discussed in a dedicated workstream
8.5.2.2.4.	5.7.3.8 The manufacturer shall undertake periodic reporting of [safety-relevant events] performance-metrics and occurrences to the relevant authority.		<b>OPI:</b> Open Item, Discussion on Relevant Authority could be needed
8.5.2.2.5.	5.7.3.8.1 The periodic report shall provide evidence of the in-service ADS safety performance. In particular, it shall demonstrate that: (a) The ADS fulfils the performance requirements as evaluated in the test methods and/or declared in the safety case. <i>(i.e. assessment of safety relevant events)</i>  (b) No inconsistencies have been detected compared to the ADS safety performance declared prior to market introduction. <i>(i.e. assessment of occurrences)</i>  (c) Any newly discovered significant ADS safety performance issues that pose an unreasonable risk to safety have been adequately addressed and how this was achieved including modifications made by the ADS manufacturer including how they were addressed..		<b>OPI:</b> this point is linked to ADS performance of the DDT and ADS interactions with user(s) sections.  <b>OPI:</b> this point is linked to Annex 7 of GRVA-19-15r1e "ISMR and safety requirements matrix"
8.5.2.4.6.	5.7.3.9 The manufacturer shall submit period reporting regularly, at least every year, in the form of aggregated data (e.g., per hour of operation and distance driven) for ADS-vehicle type and related to ADS operation. (i.e., when ADS is activated).		<b>OPI:</b> Open Item, this point is linked to Annex 10 of GRVA-19-15r1e "Consideration of ISMR templates and reporting from other stakeholders."  <b>OPI:</b> Discussion on Relevant Authority could be needed
8.5.2.5.7.	5.7.3.10 The manufacturer shall report occurrences [and safety relevant events] in accordance to the periodic reporting template in Annex X, as required by the relevant Authority, for the occurrences [and safety relevant events] flagged under "Periodic reporting" in Y.		

	The periodic reporting template (Annex x) provides a list of information with corresponding specifications that shall be made available to the relevant authority on a yearly basis in accordance with the occurrences under the “Periodic reporting”.		
8.5.2.2.9.	The relevant authority, if deemed necessary, may verify the information provided and, if needed, may make recommendations to the enforcement authority and/or to the manufacturer to remedy any detected conditions constituting an unreasonable risk to safety.	<b>OPI:</b> to discuss which section where to include this kind of requirements (post deployment role of the authority)	
8.5.2.2.10.	If a serious safety risk is identified, the relevant authority may recommend temporary safety measures, including immediately restricting or suspending the relevant operations, and require actions to restore an acceptable level of safety.	<b>OPI:</b> to discuss which section where to include this kind of requirements (post deployment role of the authority)	
8.5.2.4.1.	5.7.3.11 The manufacturer shall provide the short term and periodic reports to the relevant Authority in a report (according to reporting templates in the Annex X), that contains a summary and the information relevant to the requirements for reporting.	<p><b>OPI:</b> Open Item, Discussion on Relevant Authority could be needed</p> <p><b>OPI:</b> the template should be included in a dedicated annex to ensure harmonization and sharing of information</p> <p><b>OPI:</b> this requirement can be deleted as it is a duplication</p> <p><b>OPI:</b> Open Item, this point is linked to Annex 10 of GRVA-19-15r1e “<i>Consideration of ISMR templates and reporting from other stakeholders.</i>”</p>	
	5.7.3.12 The manufacturer shall provide, upon request of the relevant authority, the supporting data underpinning the report by means of an agreed data exchange mechanism.	<b>OPI:</b> Open Item, Discussion on Relevant Authority could be needed	
8.5.2.2.7.	5.7.3.13 The manufacturer shall provide the relevant Authority with a description of the data processing (for example: filtering and conditioning) procedure during occurrence investigation, and agree on the steps undertaken to deliver the data supporting the report.	<b>OPI:</b> Open Item, Discussion on Relevant Authority could be needed	
8.5.2.4.2.	Short term reporting is expected to be submitted for each critical occurrence.		

8.5.2.4.8	<p>5.7.3.14 The following is a list of occurrences <del>[occurrences-events]</del> to be reported by the manufacturer. For each <del>[occurrences-events]</del>, its relevance to the short-term and/or periodic reporting has been flagged in the table below.</p> <table border="1"> <thead> <tr> <th data-bbox="268 562 411 640"><i>Occurrence [Events]</i></th> <th data-bbox="411 562 507 640"><i>Short term reporting [30 days]</i></th> <th data-bbox="507 562 603 640"><i>Periodic Reporting [1 Year]</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="268 685 411 792">1 Critical occurrences known to the manufacturer</td> <td data-bbox="411 685 507 792">X</td> <td data-bbox="507 685 603 792">X</td> </tr> <tr> <td data-bbox="268 792 411 846">2 Non critical occurrences</td> <td data-bbox="411 792 507 846"></td> <td data-bbox="507 792 603 846"></td> </tr> <tr> <td data-bbox="268 846 411 940">• Occurrences related to ADS operation outside its ODD</td> <td data-bbox="411 846 507 940">X</td> <td data-bbox="507 846 603 940">X</td> </tr> <tr> <td data-bbox="268 940 411 1034">• ADS failure to achieve a minimal risk condition when necessary</td> <td data-bbox="411 940 507 1034">X</td> <td data-bbox="507 940 603 1034">X</td> </tr> <tr> <td data-bbox="268 1034 411 1106">• Occurrences related to Transfer of Control failure</td> <td data-bbox="411 1034 507 1106"></td> <td data-bbox="507 1034 603 1106">X</td> </tr> <tr> <td data-bbox="268 1106 411 1214">• Occurrences related to communication-related occurrences</td> <td data-bbox="411 1106 507 1214"></td> <td data-bbox="507 1106 603 1214">X</td> </tr> <tr> <td data-bbox="268 1214 411 1321">• Occurrences related to cybersecurity-related occurrences</td> <td data-bbox="411 1214 507 1321"></td> <td data-bbox="507 1214 603 1321">X</td> </tr> <tr> <td data-bbox="268 1321 411 1550">• [1<sup>st</sup> proposal] Occurrences related to ADS functional/subs system-level failure(s) • [2<sup>nd</sup> alternative] Occurrences related to failure scenarios</td> <td data-bbox="411 1321 507 1550"></td> <td data-bbox="507 1321 603 1550">X</td> </tr> <tr> <td data-bbox="268 1550 411 1644">• Maintenance and repair problems to ADS and its components</td> <td data-bbox="411 1550 507 1644"></td> <td data-bbox="507 1550 603 1644">X</td> </tr> <tr> <td data-bbox="268 1644 411 1751">• Occurrences related to unauthorized modifications</td> <td data-bbox="411 1644 507 1751"></td> <td data-bbox="507 1644 603 1751">X</td> </tr> <tr> <td data-bbox="268 1751 411 1798">• Occurrences related to the</td> <td data-bbox="411 1751 507 1798"></td> <td data-bbox="507 1751 603 1798">X</td> </tr> </tbody> </table>	<i>Occurrence [Events]</i>	<i>Short term reporting [30 days]</i>	<i>Periodic Reporting [1 Year]</i>	1 Critical occurrences known to the manufacturer	X	X	2 Non critical occurrences			• Occurrences related to ADS operation outside its ODD	X	X	• ADS failure to achieve a minimal risk condition when necessary	X	X	• Occurrences related to Transfer of Control failure		X	• Occurrences related to communication-related occurrences		X	• Occurrences related to cybersecurity-related occurrences		X	• [1 <sup>st</sup> proposal] Occurrences related to ADS functional/subs system-level failure(s) • [2 <sup>nd</sup> alternative] Occurrences related to failure scenarios		X	• Maintenance and repair problems to ADS and its components		X	• Occurrences related to unauthorized modifications		X	• Occurrences related to the		X	<p><b>OPI:</b> this requirement has been modified according to the proposal included in the GRVA-19-13e</p>	
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• Occurrences related to communication-related occurrences		X																																					
• Occurrences related to cybersecurity-related occurrences		X																																					
• [1 <sup>st</sup> proposal] Occurrences related to ADS functional/subs system-level failure(s) • [2 <sup>nd</sup> alternative] Occurrences related to failure scenarios		X																																					
• Maintenance and repair problems to ADS and its components		X																																					
• Occurrences related to unauthorized modifications		X																																					
• Occurrences related to the		X																																					

identification of new safety-relevant scenarios		
• Other indications of failure to meet safety requirements	X	X
• Occurrences related to safety-relevant performance issues, examining an unreasonable risk to safety	X	X
[3] Safety relevant events		
• Events where an activated ADS feature required interaction with a remote assistant to navigate a driving situation (if applicable) <sup>2</sup>		X
• Fallback user unavailability (where applicable) <sup>3</sup>		X
• Prevention of takeover under unsafe conditions (where applicable) <sup>4</sup>		X

<sup>1</sup> If such an occurrence also belongs to one of the remaining sub-categories listed in the occurrence table, the following provisions apply:

- Short term report: there is no need to double-report such occurrence also as part of one of the remaining categories listed in the table.
- Periodic reporting: the occurrence should be double-reported both as part of critical occurrence and as occurrence belonging to one of the remaining categories listed in the table. However, the report shall specifically note this aspect.

<sup>2</sup>This event does not cover remote driving, but rather events in which the ADS will require remote assistance to cope with very specific situations.

<sup>3</sup>At aggregate level, this information can provide useful information on the validity of the HMI concept and on the need to provide more effective procedures for keeping the fall-back user available.

<sup>4</sup>It is acknowledged that there is no obligation to implement such design solution. However, such information can provide useful information to evaluate the safety benefit of implementing such solution.

Submitted by the OPI on ISMR provisions

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