

# Table of tasks

Items GRRF-86-36	Last column of ACSF-17-04-Rev.1 (to be review later)	Reference to ACSF-17-03-Rev.2/tasks
<p>1. General considerations / establish the limits of the system</p>	<p>* Which traffic situations does the system have to master?</p> <ul style="list-style-type: none"> <li>• Highway conditions (as defined for ACSF of Category C): [one lane highways are OK?].</li> <li>• Max operation speed? Consider opt.1 max[80 km/h] or traffic jam assist, opt.2 Vmax: industry is not willing to prioritize. Both should be developed. During the work, we'll see if there is a need to have two sets of requirements.</li> <li>• 100% of normal situations within ODD then: initiate Transition Demand (TD) / minimum risk manoeuvre / emergency manoeuvre. OK</li> <li>• Consider activation only if system verified that it can manage the situation (within the ODD): ok, this is in line with ACSF C approach. See 5.6.4.2.3 in series 03 (no need to deactivate if the classification of road type does not change).</li> <li>• Traffic rules considerations: system shall know which traffic rules apply and follow them (within its ODD). OK on principle, however, only "relevant" rules must be considered. <b>Examples:</b> <ul style="list-style-type: none"> <li>○ Detection of relevant traffic signs and subsigns, incl. variable message signs etc.</li> <li>○ Compliance with highway code: ACSF to develop methodology suitable for use in the context of Mutual Recognition to verify the vehicle capability to comply with traffic rules.</li> </ul> </li> <li>• Vehicle manufacturer will declare situations which are not detected/handled by the system, e.g. construction area, specific weather conditions, friction coefficient of road surface, detection/interpretation of signs of police officers, detection of emergency vehicles.</li> </ul> <p><b>Suggestions:</b></p> <ul style="list-style-type: none"> <li>• Copy the approach of UN R130 (certify in one country + declaration and evidence that it works in all other CPs + audit?)</li> </ul>	<p>Paragraph 1</p> <p>To be drafted by: Germany</p>

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	<ul style="list-style-type: none"> <li>• The existing traffic rules relevant for ACSF-B2 are those related to: speed and distance with front vehicle (possibly lateral distance as well).</li> <li>• To be decided if speed could be left to the driver (as for ACC), and the system only assists (e.g. by applying maximum speed limits on motorway, recognizing road sigs...). For example there are cases where speed limits changes with weather condition or with the "status" of the driver (young drivers with recent driving licence have lower speed limits during e.g. the first year).</li> </ul>	
<b>2. Operational design domain (ODD)</b>	<p><b>General approach:</b></p> <ul style="list-style-type: none"> <li>• The vehicle Manufacturer declares the ODD, and regulation may/will define a minimum domain.</li> <li>• The proposal in GRRF-86-36 is ok, apart from that one-lane highways should be ok.</li> <li>• Extract from SAE ODD definition: "... an ODD may include geographic, roadway, environmental, traffic, speed and/or temporal limitations..."</li> </ul>	<p><b>Paragraph 1</b></p> <p>To be drafted by: Germany</p>
<b>3. Dynamic driving tasks</b>	<p><b>Main principles (extracted from OICA document ACSF-16-05):</b></p> <ul style="list-style-type: none"> <li>• The system can cope with all dynamic driving tasks within its ODD.</li> <li>• The requirements shall define the performance of the dynamic driving task including OEDR (e.g. protective braking)</li> <li>• The system shall detect its limits and issue a transition demand if these are reached.</li> </ul> <p><b>Comments about the "list of possible situations":</b></p> <ul style="list-style-type: none"> <li>○ The list cannot be exhaustive: there will always be situations which are not in the list</li> <li>○ The list may be used in the regulation as an informative list of situations, to be used by the VM to describe the ODD, or by the TS during the CEL assessment</li> </ul>	<p><b>Paragraph 2</b></p> <p>To be drafted by: OICA</p>

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<p><b>3.a. Dynamic control or the vehicle (longitudinal control, ACC, emergency braking and steering; OEDR (Object and event detection and response))</b></p>	<p><b>Relevant paragraphs in ACSF-06-28:</b></p> <ul style="list-style-type: none"> <li>• 5.6.4.1.8. "front sensor range requirements"</li> <li>• 5.6.4.6. Emergency Manoeuvre <b>Comments on 5.6.4.6. Emergency Manoeuvre:</b> <ul style="list-style-type: none"> <li>○ Open issue: should the requirements applicable to the emergency steering manoeuvre be defined in ESF section or in B2?</li> </ul> </li> <li>• 5.6.4.7. Longitudinal control and protective deceleration <b>Comments on 5.6.4.7. Longitudinal control and protective deceleration:</b> <ul style="list-style-type: none"> <li>○ The wording of 5.6.4.7.1.1 should be adjusted to reflect that it is necessary to detect critical situations, e.g. "If the activated system detects the activated system shall detect if the distance to front vehicles is..."</li> <li>○ In the same way as for ACSF C (in paragraphs 5.6.4.7 and 5.6.4.8 of R79-03), we should define what a "critical situation" is. The requirement should be that the vehicle must avoid a collision in this critical situation, by decelerating (by braking, using retarder, shifting down gear...)</li> </ul> </li> </ul>	<p><b>Paragraph 2</b> To be drafted by: OICA</p> <p><b>Paragraph 7</b> To be drafted by: OICA</p>
<p><b>3.b. Manual override</b></p>	<p><b>Relevant paragraphs in ACSF-06-28:</b> 5.6.4.1.1, 5.6.4.1.2 and 5.6.4.1.3</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>○ ACSF-16-11 seems to mix deactivation and overriding, which are two different things</li> <li>○ deactivation by "off switch" must always be available (with immediate effect or smooth transition, depending the layout and the situation)</li> <li>○ overriding by steering should always be possible for the driver; however the VM may take measures to prevent accidental overriding by driver or which may compromise safety in specific situations (including prohibiting any overriding by steering)</li> <li>○ 5.6.4.1.3. to be improved based on the above comments</li> </ul>	<p><b>Paragraph 3 and 6</b> To be drafted by: Germany</p>

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<p><b>3c. Transition procedure (and period), linked to driver monitoring</b></p>	<p><b>Relevant paragraphs in ACSF-06-28:</b></p> <ul style="list-style-type: none"> <li>• (5.6.4.2.4. Driver availability recognition system)</li> <li>• 5.6.4.4. Transition demand and system operation during transition</li> </ul> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>○ The transition period of 4s is confirmed in the industry study (see ACSF-16-08)</li> <li>○ A conclusion of the study is that the driving recovery time (by the driver) gets longer when more time is given for the transition, depending the criticality of the situation. This may explain long recovery time in some studies.</li> <li>○ Work is ongoing within industry, to review the existing studies measuring the driving recovery time of drivers in different situations. Deadline tbc.</li> <li>○ In the discussions, we should consider the "recovery time", i.e. when the driver has grabbed the steering wheel, understood the situation and is performing the right control to steer the vehicle</li> <li>○ This item 3c is closely linked to item 7. Driver availability recognition / Driver monitoring. ACSF-06-28 draft is also mixing up these two items. Before drafting a text (or splitting the work in sub-groups), the limits between these two items should be clearly defined.</li> <li>○ Other studies related to this issue shall be taken into account.</li> </ul>	<p><b>Paragraph 4 and 5</b></p> <p><b>To be drafted by: Japan</b></p>
<p><b>4. System reliability</b> (“Annex 6” + testing + redundancy considerations)</p>	<p><b>Annex 6:</b> Industry is waiting for the UK to initiate the work on so called "CEL step 2", for example with a summary of the open items left for step 2 during step 1 discussions, e.g. functional safety.</p> <p><b>Testing</b> seems to be a bit disconnected from this CEL step 2 discussion (testing should be worked in a sub-group, once the principle of the requirements will be defined)</p>	<p><b>Paragraph 8</b></p> <p><b>See decision by GRRF UK</b></p>

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	<p><b>Redundancy considerations:</b></p> <ul style="list-style-type: none"> <li>• CEL Annex is already dealing with this type of strategies, from the angle of an assessment of the chosen "safety concept" by the manufacturer</li> <li>• Redundancy should not be described in all technical details, to avoid design specific requirements, but rather in terms of a required performance (which can be fulfilled with relevant technical solutions), <b>for example:</b> <ul style="list-style-type: none"> <li>○ A system with an ODD limited to low speed traffic jam may not need any redundant steering actuator, since the vehicle can be stopped by emergency braking within a few meters.</li> <li>○ A system with an ODD aiming at cruise speed may need a redundant steering actuator (e.g. "steer by braking" or a "double coil actuator" etc.).</li> </ul> </li> </ul>	
<p><b>5. Minimal risk manoeuvre</b> (once limits of system are established)</p>	<p><b>Relevant paragraphs in ACSF-06-28:</b></p> <ul style="list-style-type: none"> <li>• 5.6.4.5. Minimal Risk Manoeuvre</li> <li>• <b>MRM shall start at the end of the transition period (which may be longer than the minimum required transition period).</b></li> </ul> <p><b>Principles:</b></p> <ul style="list-style-type: none"> <li>• MRM shall start automatically between the transition demand (when driver is requested to resume control) and before the end of the specified transition period by the manufacturer.</li> <li>• The specified value of the transition period by VM must be higher or equal than the minimum transition period required in the regulation MRM is a Manoeuvre carried out by the system to keep the vehicle in a minimum risk condition.</li> <li>• The MRM may stop when the conditions for sending the transition demand are no longer present, or by deliberate action of the driver (MRM can be overridable by the driver), or when the vehicle comes at standstill.</li> </ul>	<p><b>Paragraph 7</b></p> <p><b>To be drafted by:</b> <b>OICA</b></p>

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	<ul style="list-style-type: none"> <li>MRM shall not be specified in the regulation, since may differ depending on the actual situation (e.g. use of hazard lights, acoustic warning device, value of deceleration...).</li> <li>VM must declare the strategy in the system information.</li> </ul>	
<p><b>6. Information to the driver</b></p>	<ul style="list-style-type: none"> <li>Series 02 and 03 to R79 are a good base to draft requirements for ACSF B2, regarding e.g. the indication of system status; indication of system failures etc.</li> <li>What is new with ACSF B2 L3 is the possibility for the driver to have side activities. Below some proposals: The driver must be informed that he shall at any time be able to respond to transition demands from the system The “infotainment” must disengage as soon as a transition demand is sent.</li> </ul>	<p><b>Paragraph 6</b></p> <p><b>To be drafted by: Germany</b></p>
<p><b>7. Driver availability recognition / Driver monitoring</b></p>	<p><b>Relevant paragraphs in ACSF-06-28:</b></p> <ul style="list-style-type: none"> <li>5.6.4.2.4. Driver availability recognition system - (5.6.4.4. Transition demand and system operation during transition)</li> </ul> <p><b>General principle:</b> Provide technical means to detect that the driver is in a position to take over control within the transition demand period, e.g. by checking the driver is in the seat and is additionally showing regular activities / interactions.</p> <p><b>Proposal:</b></p> <ol style="list-style-type: none"> <li>ensure the driver is in the seat (e.g. seat belt fastened).</li> <li>ensure the driver is not sleeping, e.g.: <ul style="list-style-type: none"> <li>Driver is showing activity every [3] minutes * and/or</li> <li>Detection of eyelid and/or</li> <li>head position</li> </ul> </li> </ol> <p>(* The 3 minutes proposal is coming from draft ACSF-06-28 and is justified in Japan study ACSF-06-25 - (J) Results of a Study on Reduced Awakeness in Drivers Using ACSF)</p>	<p><b>Paragraph 5</b></p> <p><b>To be drafted by: Japan</b></p>

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8. Recording of information / DSSA	<ul style="list-style-type: none"> <li>• Industry proposal is to take DSSAD OICA presentation to WP29 as a base.</li> <li>• Industry will prepare some simple requirements to be inserted in R79 for the 18th session of ACSF.</li> </ul>	<p>Paragraph 8</p> <p>See decision by GRRF UK</p>
9. Cyber-security	<ul style="list-style-type: none"> <li>• Industry will prepare a short status of the CS&amp;OTA TF, for ACSF-17 meeting.</li> <li>• Industry is aiming at drafting simple requirements to be added in R79 for ACSF B2 Level 3, this for ACSF-18 meeting.</li> <li>• The group should not wait until a new CS regulation is available, to avoid delaying the whole ACSF B2 development.</li> </ul>	<p>Paragraph 8</p> <p>See decision by GRRF UK</p>
10. Periodical technical inspection (PTI)	<p><b>PTI provisions in R79 should rely on:</b></p> <ul style="list-style-type: none"> <li>• the warning signals available on dashboard,</li> <li>• a cross check of the system status ("system is operational" or "a failure is present") by using the electronic vehicle interface (e.g. to read the status of the warning signals)</li> <li>• the outcome from CS &amp; OTA TF on SW ID validity</li> </ul>	<p>Paragraph 8</p> <p>See decision by GRRF Sweden</p>