Secretary of TF on ADAS Document: ADAS 04-09rev1

**Overview of pending unresolved proposals for amendment to UN Regulation No. 79**

| System | UN R 79 paragraph No. | Brief description  of the proposal | Objective of the proposal (what issue to solve) | Open issues hindering to adopt the proposal | Proposal on how to resolve open issues | Remarks | Status |
| --- | --- | --- | --- | --- | --- | --- | --- |
| RMF  GRVA- 09-43 | 5.1.6.3(.x) | Introduce provisions for the approval of RMF | Ensure continued approval of RMF functions already on the market. | Questions on which basis RMF has been type approved under R79.01 and/or 02  Concern with lane changes  Concern with lack of HMI provisions  Concern with manual activation  Lack of requirement to bring vehicle to safe stop  Transitionary provision  ODD of function (i.e. speed range, triggering conditions)  Signalling requirements  Consider design restrictions (i.e. requirement of a “button” and HMI). Limit to emergency use only.  Technical requirements may be required to assess performance as intended. | Introduce side- & rear detection provisions / Specific provisions for lane changes (older proposal)  Consider system as part of wider safety concept  Introduce HMI warning provision  Test provisions  In case of manual activation, specific provisions  Industry should draft an overview of trigger conditions and how internal assessment of different existing systems is approached. Requirements could be based on this.  *Consider ADAS 01 07 to ADAS 01 12* | Clarification for applicable vehicle categories needed  Difference with MRM (ALKS)?  Different on-the-market systems have different safety strategies. ODD not always transparent for authorities and users. | *Near resolution*  ADAS 04-07rev3 & ADAS 04-15 latest documents  Submission ADAS-17 from Japan  4 issues outstanding to be resolved (overriding RMF, lane change capabilities, acoustic warning & special provisions M2/M3) |
| ACSF B1  GRVA-09-37 | 5.6.2.2.3 | Continue to provide B1 assistance in case the maximum lateral accel is reached and original lane of travel can be determined | Clarify expected support behaviour in absence of lane markings. Avoid sudden loss of support. | Reference to Annex 6 should be included. | Clarify expected behaviour in the absence of lane markings vs Annex 6 reference  Rapid change of steering angle should not be allowed when boundary conditions are reached | For general approach, consider need for provisions re: safety strategies | *Not resolved*  No compromise yet achieved on existing proposal. New OICA-CLEPA submission received ADAS 04-12 |
| ACSF B1  GRVA/2021/07 | 5.6.2.1.3 | Introduce special provision to allow temporary exceedance of lateral acceleration limit | Avoid erratic behaviour (lane departure or excessive braking) in tight/multiple curves, especially up to <80kph | Unclear why current 3 m/s² would lead to unsafe situations  Concern with excessive speeding through curves  Concern with mode confusion and overreliance  Concern with sufficient friction (i.e. in winter or slippery conditions). System may not be able to determine if available friction is sufficient.  System may not be able to estimate radii of curves.  Increasing the lateral acceleration limit may increase the severity of in cases of loss of support. | Avoid reaching the limit of 3 m/s² by reducing speed  Maintain 3 m/s² lateral acceleration target limit but limit steering jerk limits for temporary exceedance over 3 m/s².  Alternatively define requirement to stay in lane, slow-down and maintain road-legal speeds.  Notify driver if tight turn/challenging bend has been detected, limit has been exceeded  Ensure vehicle stability at cornering to avoid skidding.  Ensure that the lateral acceleration levels are within the comfort range for riding a vehicle and not disruptive to traffic (i.e. harsh braking)  Consideration of bad weather/poor adhesion conditions. ODD should account for those conditions.  OEM should have control strategies in place to avoid reaching the lateral acceleration limit. | Lane departure should be avoided in bends at all times.  A vehicle may not always be able to predict the curvature of the bend (i.e. poor visibility).  Urban/rural bends/turns may induce higher lateral accel at low speeds.  Robustness/maturity should improve before existing restrictions (such as lateral acceleration) are widened up. Industry should focus on ‘wider’ ODD.  B1 is possibly currently not used as intended as it is often combined with other driver support systems. | *Not resolved*  No compromise yet achieved on existing proposal.  No new proposal received, informative AVERE submission AVERE submission ADAS 02-14. |
| ACSF C  GRVA/2021/09 | 5.6.4.7 | Introduce a tolerance of 10% to the critical distance | Improve system behaviour in dynamic traffic conditions where rear and ego vehicle may accelerate/deceleration.  Reduce system interventions in real-world traffic otherwise navigated by human drivers. | Concern with excessive braking with a tolerance  Further review of 10% impact | Consider critical situation provision with both longitudinal and lateral acceleration considerations  Consider intent of provision (safe or critical distance?)  Consider formula in consideration of vehicle detection from starting position in lane (not just lane line).  Ensure that reducing critical distance will not lead to an accident.  Manufacturer could be able to define and evidence appropriate critical situation approach based on vehicle/system performance and dynamics, and declare to AA  General approach to handling lane changes in different environments needed | The critical situation is currently defined when the ego vehicle is at the lane line. In reality, vehicles will begin detection at the lane centre.  Constant speeds should not be presumed | *Not resolved*  No compromise yet achieved on existing proposal. No new submission received. |
| ACSF C  GRVA/2021/10 | 5.6.4.6.4.(x) | Extend allowed time to start a C1 lane change manoeuvre to 7s (or more) | Current limits result in excessive lane change failures in traffic (bouncing behaviour, driver/traffic confusion, etc.) | System should behave in line with driver education and not hinder upcoming traffic  Increased disharmonisation with C2 where there is 3 sec to reach the lane marking after 2nd deliberate action of the driver  ‘Critical distance’ is effectively taken as ‘safe distance’ leading to hindering or upcoming traffic  A lane change should start ASAP when a driver defined clear to go  A driver should not become distracted | The combination of a minimum and maximum time requirement is proving too restrictive.  Transpose into requirement to complete a requested lane change as soon as possible and in a safe, consistent manner.  Consider differences in lane changes in multiple traffic situations/environments.  General approach to handling lane changes in different environments needed. | Minimum time requirement changes the traffic situation before movement occurs.  How should differences in traffic/rules and ideology be handled within TA?  Robustness and majority of systems should improve before ODD is widened up. Widening up the ODD should be the industry’s focus.  The driver should not be encouraged to make an unnecessary lane change. | *Not resolved*  No compromise yet achieved on existing proposal.  New OICA-CLEPA submission ADAS 04-11  AVERE submission ADAS 02-14 |
| RCP  GRVA/2021/12 | 5.6.1.2.(x)  5.6.1.3.1.4 | Alternative HMI for RCP initiation | Allow for alternative implementation of RCP (motion-commanded) | Concern with driver becoming the remote-controlled device. | Consider generic approach to RCP.  Allow manufacturers ability to evidence safety of alternative implementations. |  | *Near resolution*  New OICA-CLEPA submission GRVA-08-28rev1.1 |
| ESF (Maneuver Assist)  GRVA-07-24 | 5.1.6.2.3  5.1.6.2.3.2.  Annex 8 – 3.3.4. | Adapt existing ESF provisions at low speed | Adapt existing ESF provisions to permit low-speed maneuvering assist | Justification needed for the proposed max. lateral offset rate | Manufacturer to provide insight on why the chosen max. offset rate will not jeopardize the controllability by the driver. | Such systems are on the market already. Introduction of category ESF provisions in R79.03 hinder new approvals (and registrations soon). | *Not resolved*  OICA-CLEPA document ADAS 04-14 |
| ACSF C for HCV  GRVA/2021/11 | 5.6.4. and others | Adapt ACSF C to enable the function on HCVs | How to address the truck trailer combination in lane change provisions | Update of GRVA/2021/11 needed | Industry will update the proposal by Q2/2021 |  | *Not resolved*  OICA-CLEPA document ADAS 04-15 |