OICA and CLEPA Proposal to amend the interim FRAV submission 33 04 to GRVA/WP.29

Proposal #1

Replace paragraph 5.8.3 from:

"5.8.3. This section recommends ~~functional and behavioural~~ requirements for assessing the ADS performance of the DDT under normal operational and driving conditions."

to read:

"5.8.3 This section recommends **safety** *requirements for assessing the ADS performance of the DDT under normal operational and driving conditions"*

Justification

Proposal to not split requirement categorization in functional and behavioural, but keep as ADS Safety Requirements. Furthermore, this allows to maintain consistent requirement structure with FRAV 30 05 Annex 1 requirement table.

Proposal #2

Replace all content from paragraph 5.8.4 until 5.8.5.14 to read:

"5.8.4 The ADS shall be capable of performing the entire Dynamic Driving Task (DDT) within the ODD of its feature(s).

5.8.5 As part of the DDT, the ADS should be able to:

> *5.8.4.1 The ADS should be able to operate at safe speeds.*

> *5.8.4.2 The ADS should be able to maintain appropriate distances from [other road users] by controlling the longitudinal and lateral motion of the vehicle.*

> *5.8.4.3 The ADS should be able to adapt its driving behaviour to the surrounding traffic conditions (e.g., by avoiding disruption to the flow of traffic).*

> *5.8.4.4 The ADS should be able to adapt its behaviour in line with safety risks (e.g., by giving all road users and passengers the highest priority).*

5.8.6 The ADS shall recognize the conditions and boundaries of the ODD of its feature(s) pursuant to the manufacturer's declaration under paragraph x

> *5.8.6.1 The ADS should be able to determine when the conditions are met for activation.*

> *5.8.6.2 The ADS should detect and respond when one or more ODD conditions are not or no longer fulfilled.*

> *5.8.6.3 The ADS should be able to anticipate planned exits of the ODD*

5.8.6.4 The ODD conditions and boundaries (measurable limits) should be established by the manufacturer.

5.8.6.5 The ODD conditions to be recognized by the ADS should include:

  A) Precipitation (rain, snow)

  B) Time of day (light intensity, including the case of the use of lighting devices)

  C) Visibility

  D) Road and lane markings

5.8.7 The ADS shall detect and respond to objects and events relevant to its performance of the DDT.

  5.8.7.1 Objects and events might include, but are not limited, to:

  A) Vehicles, motorcycles, bicycles, pedestrians, obstacles

  B) Road accidents

  C) Road safety agents / enforcement agents

  D) Emergency vehicles

  5.8.7.2 The ADS shall detect objects in and around its path of travel that exceed a minimum size.

  5.8.7.3 The ADS shall recognize objects as static or mobile.

  5.8.7.4 The ADS shall recognize markings and signals used to indicate priority vehicles within the ODD of its feature(s).

  5.8.7.5 The ADS shall classify priority vehicles within the ODD of its feature(s) in accordance with the relevant traffic law(s).

  5.8.7.6 The ADS shall yield the right of way to priority vehicles in service in accordance with the relevant traffic law(s).

5.8.8 The ADS shall comply with safety-relevant traffic laws according to the ODD of the feature in use.

  5.8.8.1 ADS should comply with the traffic laws in nominal conditions, except when in specific circumstances or when necessary to enhance the safety of the vehicle's occupants and/or other road users.

5.8.9 The ADS shall interact safely with other road users.

  5.8.9.1 The ADS shall avoid collisions with safety-relevant objects where possible.

  5.8.9.2 The ADS shall signal intended changes of direction.

Justification

Align requirement structure and content with FRAV 30 05 Annex 1 requirement table to maintain content accuracy and link between high and detailed level requirements.

Carried over content excludes "The ADS shall signal its operational status (active/inactive) as needed." as per FRAV GRVA ADS External Status Signaling recommendation document, such status signal is not recommended to be mandatory.

Requirement from FRAV 30 05 "*Adapt its behaviour to the surrounding traffic conditions (e.g., by avoiding disruption to the flow of traffic).*" now includes "***driving***" for better clarity of the requirement: "*Adapt its **driving** behaviour to the surrounding traffic conditions (e.g., by avoiding disruption to the flow of traffic).*"

Proposal #3

Replace paragraph 5.9.3 from:

"*5.9.3. This section recommends ~~functional and behavioural~~ requirements for assessing the ADS performance of the DDT under critical driving conditions.*

to read:

"*5.9.3 This section recommends **safety** requirements for assessing the ADS performance of the DDT under critical driving conditions.*"

<u>Justification</u>

Proposal to not split requirement categorization in functional and behavioural, but keep as ADS Safety Requirements. Furthermore, this allows to maintain consistent requirement structure with FRAV 30 05 Annex 1 requirement table.

Proposal #4

Replace content starting from paragraph 5.9.4 until 5.9.5 to read:

"*5.9.4 The ADS shall execute a fallback response in the event of a failure in the ADS and/or other vehicle system that prevents the ADS from performing the DDT.*

> *5.9.4.1 In the absence of a fallback-ready user, the ADS should fall back directly to a Minimal Risk Condition (MRC)*

> *5.9.4.2 If the ADS is designed to request and enable intervention by a human driver, the ADS should execute an MRM in the event of a failure in the transition of control to the user*

>> *5.9.4.2.1 Upon completion of an MRM, a user may be permitted to assume control of the vehicle*

>> *5.9.4.2.2 The user should be permitted to override the ADS to assume full control over the vehicle*

5.9.5 The ADS shall signal its intention to place the vehicle in an MRC.

5.9.5.1 The ADS should signal its intention to place the vehicle in an MRC to the ADS user or vehicle occupants as well as other road users (e.g., by hazard lights)

5.9.6 Pursuant to a traffic accident, the ADS shall stop the vehicle.

5.9.6.1 ADS reactivation should not be possible until the safe operational state of the ADS has been verified."

Justification

Align requirement structure and content with FRAV 30 05 Annex 1 requirement table.

Requirement *5.9.5.1* above has merged the main and two sub points from the Annex 1 table of the FRAV 30 05 for editorial improvement purposes.

Proposal #5

Replace content starting from paragraph 5.10.2 until 5.10.3 to read:

"5.10.2 The ADS shall detect and respond to system malfunctions and abnormalities relevant to its performance of the DDT.

> *5.10.2.1 The ADS should perform self-diagnosis of faults in accordance with the OEMs prescribed list*

> *5.10.2.2 The ADS should detect system malfunctions/abnormalities and evaluate system's ability to fulfill the entire DDT*

5.10.3 The ADS shall be designed to protect against unauthorized access.

> *5.10.3.1 The measures ensuring protection from unauthorized access should be provided in alignment with engineering best practices.*

5.10.4 The ADS shall signal [faults/failures] compromising its capability to perform the entire DDT relevant to the ODD of its feature(s).

5.10.5 The ADS shall be designed to protect against unauthorized modifications to safety-critical hardware and software.

5.10.6 The ADS may continue to operate in the presence of [faults/failures] that do not prevent that ADS from fulfilling the safety recommendations applicable to the ADS.

> *5.10.6.1 The limited operation of the ADS should comply to the normally applicable safety requirements.*

> *5.10.6.2 For situations where the ADS is not able to perform the DDT safely, the ADS should have the function to prevent activation. If the ADS has OTA functionality, this function may be activated remotely if the authorities or the vehicle manufacturer determine that the ADS is unsafe*

5.10.7 The ADS shall signal [faults/failures] compromising its ability to execute the DDT.

 5.10.7.1 The ADS should signal [faults/failures] affecting the ability to execute the DDT."

<u>Justification</u>

Align requirement structure and content with FRAV 30 05 Annex 1 requirement table to maintain content accuracy and link between high and detailed level requirements.

<u>Proposal #6</u>

Replace content starting from paragraph 5.12.1.1 until 5.12.1.9 to read:

"5.12.1.1 The ADS should signal required system maintenance to the user.

5.12.1.2 The ADS should be accessible for the purposes of maintenance and repair to authorized persons

5.12.1.3 ADS safety should be ensured in the event of discontinued production/support/maintenance."

<u>Justification</u>

Align requirement structure and content with FRAV 30 05 Annex 1 requirement table to maintain content accuracy and link between high and detailed level requirements.