Proposal for amendments to FRAV interim submission

Submitted by the expert from the United Kingdom

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Proposal

3.X ***"User-Initiated Takeover"* means a user-initiated procedure by which the ADS hands over dynamic control of the vehicle to a user such that the user assumes the role of driver upon completion.**

5.11.8 An ADS which ~~permits~~ **may request** a transition of control shall be designed to ensure safe transitions of control **to a fallback user**.

5.11.8.1 The Transition of control process shall follow a common sequence of actions and states

5.11.8.2 Transition of control shall return to a common default user role

  a) The role of the user after a transition of control from the ADS to the user or after the deactivation of the ADS. This role shall normally be a fully engaged driver without any control assistance (temporarily intervening safety systems such as ESC will remain activated)

5.11.8.3 The ADS shall continuously verify whether the **fallback** user is available for the Transition of Control and

  a) adapt the Transition of Control process, including the time budget where feasible, to the state of the **fallback** user and/or to the ADS.

  b) warn the **fallback** user if not available when required

  c) register **fallback** user response indicating readiness for transfer of control

5.11.8.4 The ADS shall verify that the **fallback** user is in stable control of the vehicle to complete the Transition of Control process

5.11.9. An ADS which permits user-initiated takeovers of control shall be designed to ensure a user-initiated takeover process**.**

5.11.9.1 Such ADS shall allow the user to initiate a take-over process.

5.11.9.2 The deactivation shall follow a common sequence of actions and states in the ~~transition~~ **user-initiated takeover** of control (change of user roles)

Address case of a driverless vehicle with vehicle controls that would permit a user to take control of the vehicle but would not necessarily or ever request a user to take control. This would be a "dual use" configuration. Cover a situation where a user might need to take over or want to take over.
ITU: clarify L4 scope/configuration. Is L4 limited to operation within the ODD? Can an L4 vehicle be driven by a human outside ODD?
SAE: L4 has ODD. Depending on configuration, human could be permitted to take control.
ITU: What happens with L4 at end of ODD.
SAE: Either signals for user intervention or falls back to MRC. Definitionally, both are options. Line is whether safety requires fallback user. If takeover does not occur, must have MRC fallback capability.
NL: Supports proposal to differentiate cases. Difference between fallback user who needs to take control versus user who decides to intervene. Requirements would address any user intervention.
SAE: "user" broad enough to cover, "passenger" could become a driver if permitted by ADS design.
NL: user must be qualified to take control.
China: Difference between "user takeover" and "override"?
Secy: Would still need ADS assessment of user inputs.
UK: Override means input priority over system control. This interaction would be slightly different with a controlled transition of control.
FR: Support UK comment. Override is user input that supersedes current system control. This situation would not be this overriding but more of a transition of control from the ADS.
OICA: okay to insert but shade in blue to signal need for further discussion.
Decision: Amend text, shaded in blue for further consideration.

5.11.9.3 **The ADS shall verify whether the user is ready for the takeover of control**

5.11.9.**4** The ADS shall momentarily delay deactivation of driving control when immediate human resumption of control could compromise safety.

5.11.9.5 **The ADS shall verify that the user is in stable control of the vehicle to complete the user-initiated takeover of control process**

5.11.9.**6** The ADS shall provide clear, specific feedback of the completion of a user initiated take over.

5.11.9.**7** The user initiated take over shall return to a common default user role being the driver.

a) The role of the user after a ~~transition~~ **user-initiated takeover** of control from the ADS to the user or after the deactivation of the ADS. This role shall normally be a fully engaged driver without any control assistance (temporarily intervening safety systems such as ESC will remain activated)

Justification

The term "Transition of control" specifically refers to a transition of control to a fallback user. However, it is used in 5.11.9 which is a requirement focused on user initiated takeover of control. Currently there are no definitions to refer to a user voluntarily taking control of the system.

This proposal adds a new definition of user-initiated takeover to cover this situation.

5.11.8 refers to transitions of control. This has been clarified that it refer to fallback users not all users so there is no requirement to monitor a user who is not a fallback user.

5.11.9 refers to user-initiated takeovers and so should not have any reference to transition of control. Uses of transition of control have been changed to the new term

Two new points are added to 5.11.9 to ensure the user is in stable control of the vehicle before the ADS deactivates.