Definitions in View of GRE TF AVSR

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Preliminary Remark

The goal is to get a common language and a common understanding

Pre-conditions by GRVA/FRAV

In the Document **GRVA-16-29/Rev.1. under paragraph 3 the** Terms and definitions **are listed:**

3. **Terms and definitions.**
    This section defines terms used in this document. Use of these terms and their definitions is recommended in the development of legal requirements related to ADS and ADS vehicles.

3.1. *"Automated Driving System (ADS)"* means the hardware and software that are collectively capable of performing the entire DDT on a sustained basis regardless of whether it is limited to a specific operational design domain (ODD).
3.2. *"(ADS) feature"* means an application of ADS hardware and software designed specifically for use within an ODD.
3.3. *"(ADS) function"* means an ADS hardware and software capability designed to perform a specific portion of the DDT.
3.4. *"ADS vehicle"* means a vehicle equipped with an ADS.
    ...

3.5. *"Behavioural competency"* means an expected and verifiable capability of an ADS feature to operate a vehicle within the ODD of the feature.

3.6. *"Driver"* means a human being who performs in real time part or all of the DDT.

3.7. *"Dynamic Driving Task (DDT)"* means the real-time operational and tactical functions required to operate the vehicle in on-road traffic.
…..

3.8. *"(ADS) fallback response"* means an ADS-initiated transition of control or an ADS-controlled procedure to place the vehicle in a minimal risk condition.

3.9. [*"Fallback user"* means a user designated to perform the DDT pursuant to an ADS fallback response.]
3.10.*"Minimal Risk Condition (MRC)"* means a stable and stopped state of the vehicle that reduces the risk of a crash.

3.11.   *"Operational Design Domain (ODD)"* means the operating conditions under which an ADS feature is specifically designed to function.

Examples include setting the starting point, destination, route, and way points to be used by an ADS during a trip.

Examples include deciding whether to overtake a vehicle or change lanes, signalling intended manoeuvres, deciding when to initiate the manoeuvre, choosing the proper speed, and executing the manoeuvre.

Operational functions involve executing micro-changes in steering, braking, and accelerating to maintain lane position or proper vehicle separation and immediate responsive actions to avoid crashes in critical driving situations.

[In this document, the ODD only refers to the vehicle's external environment condition. If all conditions are referred to, a different term can be defined.]

3.7.1. The DDT is always performed in its entirety by the ADS in operation ("the entire DDT" as stated in the definition of an "Automated Driving System" under para. 3.1.) which means the whole of the tactical and operational functions necessary to operate the vehicle. These functions can be grouped into three interdependent categories: sensing and perception, planning and decision, and control.

3.7.1.1. Sensing and perception include:

…

3.7.1.2. Planning and decision include:

…

3.7.1.3. Control includes:

Object and event response execution.
Lateral vehicle motion control.
Longitudinal vehicle motion control.
Enhancing conspicuity via lighting and signalling.

3.7.1.4. The DDT excludes strategic functions.

3.7.2. *"Strategic function"* …
3.7.3. *"Tactical function"* …
3.7.4. *"Operational function"* …

Views from Parts Regulations

Parts Reglations are develloped for manually driven vehicles by a **driver**

The driver is defined √

But what is in an Automated Vehicle the responsible equivalent to the „Driver" ?

AVSR has called it the „Driving System" or may be better the „Driving System Control" (DSC)

3.1.1.   "*Driving system control (DSC)*" means the part of the ADS which controls the entire DDT completely; it may be operated by driver support features or automated driving features.

In Addition Necessary Definitions:

1.   **MDV:**

     "*Manually Driven Vehicle (MDV)*" means a vehicle controlled by a driver.
Or alternatively:
     "*Manually Driven Vehicle (MDV)*" means a vehicle in which a driver is performing the entire DDT.

2.   **Dual Mode Vehicle**
     "*Dual mode vehicle (DMV)*" means a vehicle, in which the entire DDT is performed either by:
          a driver, or
          a DSC.

3.   **ADS vehicle**
      "ADS vehicle" means a vehicle equipped with an ADS**, and the entire DDT is permanently performed by a DSC**.

On EU-level a definition for dual mode vehicle is already existing –*)

'dual mode vehicles' means fully automated vehicles with a driver seat designed and constructed:
(a) to be driven by the driver in the 'manual driving mode' and
(b) to be driven by the ADS without any driver supervision in the 'fully automated driving mode'

*) see *https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R1426*

Remarks to the Definition of DDT

3.7.1.3.   Control includes:

Object and event response execution.

Lateral vehicle motion control.

Longitudinal vehicle motion control.

via lighting and signalling,

Indication of vehicle status or intended driving manoeuvres

and, if required, enhancing conspicuity.

Conclusion:

From our perspective , we need in minimum the following definitions for ECE – Regulation 48 or other Parts Regulations

1. *"Driver"* means a human being who performs in real time part or all of the DDT.

2. *"Dynamic Driving Task (DDT)"* means the real-time operational and tactical functions required to operate the vehicle in on-road traffic.

3. **"*Driving system control (DSC)*" means the part of the ADS which controls the entire DDT completely; it may be operated by driver support features or automated driving features.**

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4.   **MDV:**

    "Manually Driven Vehicle (MDV)" **means a vehicle controlled by a driver.**
Or alternatively:
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5.   **Dual Mode Vehicle**
    "Dual mode vehicle (DMV)" **means a vehicle, in which the entire DDT is performed either by:**
        a driver, or
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6.   **ADS vehicle**
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Thank you for your attention!