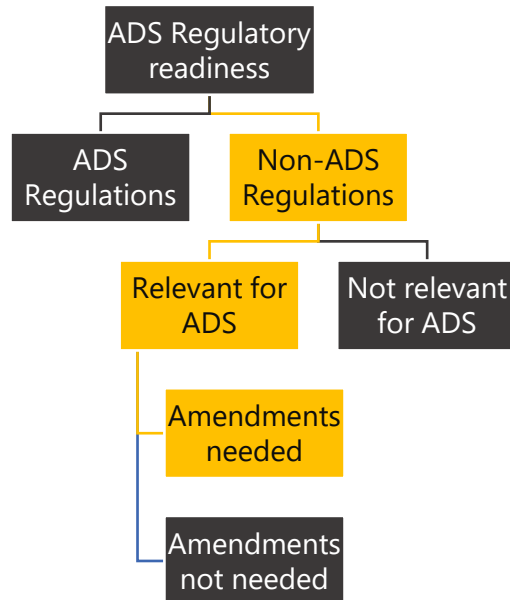


Task force on regulatory **Fitness for ADS**

Status report

Context and purpose

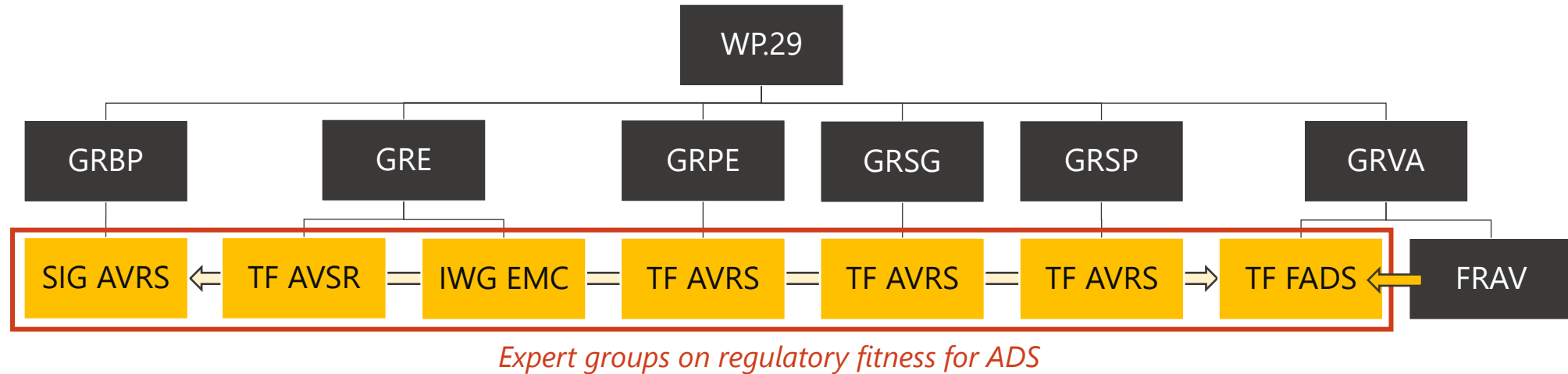


- Contracting Parties and the industry need a regulatory environment for automated vehicles, including non-ADS Regulations
- Which existing Regulations are relevant for automated vehicles? Which ones need to be amended before being applicable to vehicles with ADS?

Original mandate (given by WP.29 186th session):

- Scan all **167** UN Regulations and **23** Global Technical Regulations
- Expected at 190th session in June 2023: **Report, summary** and **details** for each Regulation, instructions for **drafting amendments**

Report to WP.29



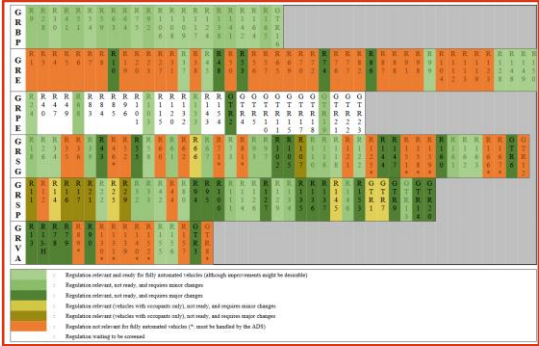
Report to WP.29 (WP29/2023/86) (re-submitted with translation as GRVA/2023/18):

- Contains global results, summary sheets for each screened Regulations (see next slide)
- Adopted by WP.29
- Will be updated to reflect the continued progress of the groups

New mandate

- All groups may start drafting amendments to proposed “priority Regulations”
- The groups shall present a timeline for amending relevant regulations at WP.29 in March 2024
- Coordination between groups shall continue for common definitions, translations and solutions to cross-GR issues

Contents of the report



Relevance / readiness screening overview

Theme	Related keywords					
Human person	Driver Rider	Passenger	Person	Occupant	Crew (member)	
Areas within the vehicle	Cockpit Driver's compartment Driving cab		Passenger compartment			
Body Parts	Hand Foot Arm Etc.					
Manual action	Lever Button Handle Switch	Push Pull Press Rotate	Force Muscular (energy)	Reach Accessible	Manual	

List of relevant keywords

be relevant to maintain basic performance tests for Regulations on braking or steering in the interest of ensuring the compliance of the automated vehicle to these existing performance requirements.

4. **Dual-mode interactions**

29. Dual-mode vehicles may be equipped with several features, which might only be relevant in manual mode, especially driver assistance or active safety features. If those features are suspended when switching from manual to automated mode, their behaviour when switching again to manual mode should be the object of clear provisions, supporting the driver to safely regain control of the vehicle, also for the case when transitions only occur while the vehicle is stationary.

5. **Test mode**

30. Many Regulations contain testing provisions which must be performed on a testing bench or a test track. In both cases, automated vehicles without manual driving capabilities should be able to perform the exact test scenarios described in the Regulation. While there are no requirements at this stage on how this can be achieved, one potential solution is for the manufacturer to equip their vehicles with a test mode, which would allow any specific driving scenario to be generated by a Type Approval Authority or Technical Service. Special

List of high-level issues

Subsidiary Working Party	Regulations to be amended in priority
GRBP	R9, R28, R51, R138, R165
GRE	R10, R48
GRPE	To be decided after all Regulations have been screened.
GRSG	R43, R107, R160, R.E.3, S.R.1
GRSP	R11, R14, R16, R 17, R 21, R29, R94, R95, R100
GRVA	R13, R13-H, R79

List of Regulations & GTRs to amend in priority

Regulation No.	The number and title of the Regulation, including the exact Series of amendments and supplement used during the screening process. Categories of vehicles (as defined in R.E.3 or S.R.1) which the Regulation is applicable to.	Date of review	Date of the creation of this one-page summary
Scope			
Content of existing Regulation	Short explanation of the purpose of the Regulations or the provisions contained therein.	Specifies for dual-mode vehicles	Any provisions that have a particular effect on dual-mode vehicles, e.g. because of interactions between manual driving capabilities and a driving task carried out by the ADS, or because of issues that may occur during transitions between manual and automated modes.
Content relevant for vehicles equipped with an ADS	Examples of provisions particularly relevant when the driving task is carried out by an ADS, whether the vehicle be "dual mode", without manual driving capabilities or not designed to carry occupants.	Specifies for vehicles without manual driving capabilities	Any provisions that have a particular effect on vehicles not equipped with manual driving capabilities. Example: a "driver's seat" still exists in a dual-mode vehicle, but not in a vehicle without manual driving capabilities.
Content to be covered by (potential) ADS Regulation	Concepts related to the Regulation, and which should be handled by the ADS.	Specifies for vehicles without occupants	Any provisions that have a particular effect on vehicles not equipped that are not designed to carry occupants. Example: a "passenger compartment" does not exist in a vehicle that is not designed to carry occupants.
Summary of recommended changes	Possible (non-exhaustive) changes that could contribute to making the Regulation applicable to automated vehicles.		
Notes	Additional comments from the screening task force.		
Outcome of the review		Yes	No
Regulation relevant for fully automated vehicles		See OBJECTIVE 1	
Readiness:	Regulation ready	See OBJECTIVE 2	
	Major amendments needed	See OBJECTIVE 3	

Screening results for individual Regulations and GTRs

Focus on GRVA Regulations

Relevant No changes needed	R155 Cybersecurity	R156 Software Updates				
Relevant Major changes required	R13 Braking (HDV)	R13-H Braking (cat. M ₁ -N ₁)	R79 Steering	R78 Braking (cat. L)	R90 Replacement brake parts	GTR3 Braking (cat. 3-1 to 3-5)
Not relevant Performance covered by ADS	R89 (A)SLD/F	R130 LDWS	R131 AEBS (HDV)	R140 ESC	R152 AEBS (cat. M ₁ -N ₁)	GTR8 ESC
Not relevant	R139 BAS	R157 ALKS				

Focus on GRVA Regulations

Relevant No changes needed	R155 Cybersecurity	R156 Software Updates				
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Not relevant	R139 BAS	R157 ALKS				

To amend in priority

Areas of work

Amending R13, R13-H and R79

Drafting led by EC with support from JP, UK, OICA/CLEPA

First amendment proposal to include dual-mode vehicles only

First drafts to be completed in October

Highest priority

Cross-GR issues

(Sub)categories for automated vehicles

Impact of ODD on performance and testing requirements

Test mode

Dual-mode interactions

Etc.

Common definitions

Based on FRAV definitions

Currently drafting the smallest possible list of needed definitions (see next slide)

Common translations

First draft transmitted to the other groups

Definition dependencies (from FRAV-43-04rev4)

Example: a definition such as *“maximum design speed of the vehicle”* needs to be changed to introduce the maximum speed supported by the **ODD**.

Operational Design Domain

Operating conditions under which an **ADS feature** is specifically designed to function.

ADS feature

An application of **ADS** hardware and software designed specifically for use within an ODD.

Automated Driving System

The hardware and software that are collectively capable of performing the entire **DDT** [...]

Operational function

A capability to control the real-time motion of the vehicle.

Tactical function

A capability to perceive the vehicle environment [...]

Dynamic Driving Task

The real-time **operational and tactical functions** required to operate [...]

These definitions should not have to be added to each relevant Regulation

The groups would welcome a **central document at the WP.29 level**

FADS will consult FRAV for missing useful definitions (dual-mode vehicle, etc.)

Next steps

- Full focus on amendments to R13, R13-H and R79 for dual-mode vehicles
- Meeting in Paris on 16-19 October 2023
 - 16-17 (joint meeting of ADS fitness groups): review of cross-GR items (issues, definitions, translations)
 - 18-19 (FADS only): review of amendment drafts for R13, R13-H and R79
- FADS aims to present first amendment proposals at the 18th GRVA session in January 2024

Requesting validation from GRVA

- **Areas of work:** amendments, issues, definitions, translations
- **Immediate priority:** amend R13, R13-H and R79 for dual-mode vehicles