

# A starting point for ToR

Vehicle has a driver  
Driver is able to control



ToR Section 1

Only vehicle systems drive



ToR Section 2

Steering from outside

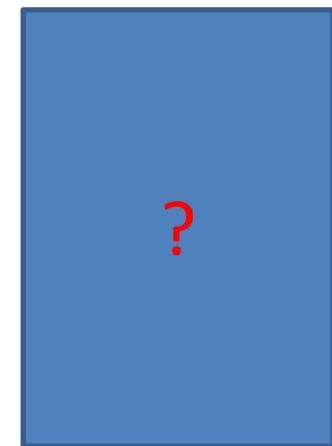


ToR Section 3

Applicable framework?



Applicable framework?



# Section 1, Drivers + ADAS

- Define the activities drivers of highly automated vehicles cannot not engage in when vehicle systems drive the vehicle
- Define those activities as a function of vehicle systems capabilities
- Define the start and end points of driving by the driver and vehicle systems
- Define the requirements for training/re-training for drivers of highly automated vehicles



This is not an exhaustive list, but some issues to start with!

# Section 1, Drivers + ADAS

Define the activities drivers of highly automated vehicles cannot not engage in when vehicle systems drive the vehicle

Why?

- Engaging in certain activities can compromise driver's ability to take over when requested to do so by vehicles systems

or

- Engaging in certain activities can compromise the driver's ability to take over in general e.g. to drive 'the last mile'



*From informal document no. 4:*

Art1. Principles relating to the driver of a vehicle that can operate in driverless mode and can also permit driver operation of the vehicle.

*to include : permissible driver activities, alcohol and drug impairment*

# Section 1, Drivers + ADAS

Define such activities as a function of vehicle systems capabilities

Why?

- Certain activities may compromise the driver's ability to take over when requested to do so by less advanced vehicle systems

while

- The same activities may be recommended to engage in to a driver to be fit for driving at the end of the journey without support of the vehicle systems (e.g. after exiting a motorway)



# Section 1, Drivers + ADAS

Define the start and end points of driving by the driver and vehicle systems

Why?

- It should be detectable who was/is driving



# Section 1, Drivers + ADAS

Define the requirements for training/re-training for drivers of highly automated vehicles

Why?

- As vehicle systems would be expected to drive most of the time, drivers (required to be in control) might gradually degrade their driving skills
- As a result of the above they might not be able to drive properly when deciding to do so

therefore

- A new driver training and periodical retraining might be necessary to ensure drivers maintain their skills



*From informal document no. 4:*

*Art2. Principles relating to driver licensing and training*

*to include : Advice on the need for a licensed driver in a vehicle that can operate in driverless mode or by driver control, and advice on licensing requirements and examinations*

# Section 2, Driverless vehicles

- Define driverless driving
- Define rules for riding
- Define rules for the use of hybrid steer vehicles as driverless vehicles
- Consider infrastructure changes



This is not an exhaustive list, but some issues to start with!

# Section 2, Driverless vehicles

## Define driverless driving

Why?

- While there are rules for vehicle maneuvering in the Conventions, such rules would need to be observed by driverless vehicles too

however

- Some of those rules may need to be adjusted

and

- Some other/additional rules and regulations may be needed

Art6. Recommendation on the collection and access of data on safe operation of driverless vehicles



*From informal document no. 4:*

Art3. Principles relating to integration of driverless vehicles in traffic

*to include : Advice on vehicle compliance with traffic code ....*

Art.4 Principles relating to the interaction of driverless vehicles and public safety or emergency officials

*to include: Advice on passing info...*



# Section 2, Driverless vehicles

## Define rules for riding

Why?

- Today drivers know the rules and instruct passengers on the necessary behaviour; in driverless vehicles either passengers should know the rules or the vehicle systems should be able to instruct passengers in every situation

hence

- Will vehicle systems be able to instruct in every situation?
  - What if due to a collision the vehicle systems would go off UNCLEAR?
  - What about instructing passengers when they are outside of the vehicle?



*From informal document no. 4:*

Art5. Principles relating to the education of consumers and other road users about the operation of driverless vehicles

*to include: Advice on need for training to pedestrians, bicyclists and VRU about safe interaction with driverless vehicles in traffic*

# Section 2, Driverless vehicles

## Define rules for riding (cont.)

Why?

- Today there is always an adult as the driver who is fit to drive, and who knows rules for transporting passengers and cargo; in driverless vehicles anybody could ride

Hence

- Should anybody be able to ride e.g. small children?
- What if cargo is not properly stowed, who will be in breach of the rules?
- What if passenger count is not appropriate (a child on an adult's lap), who will be in breach of the rules?



# Section 2, Driverless vehicles

## Define rules for use of hybrid steer vehicles as driverless vehicles

Why?

- If a driver can take over driving at any time from vehicle systems, the hybrid steer vehicle will only be used as highly automated vehicle (ref to driver activities)

Hence

- How should the deactivation of driving by driver be addressed?
  - Temporary deactivation? or
  - Geographical deactivation?



# Section 2, Driverless vehicles

## Consider infrastructure changes

Why?

- Infrastructure changes can help increase safety, e.g. when entering to or exiting from driverless vehicles by passengers
- They can also help improve traffic flows

but

- Any changes should take into account the coexistence of driverless vehicles and conventional road users



*From informal document no. 4:*

Art7. Other measures and policies to optimize the road safety benefits of driverless vehicles

*to include: Advice concerning policies and programs (e.g., incentives or road use rules) to accelerate usage of driverless vehicles and the consequent realization of safety benefits*

# Section 3, Operating vehicles from the outside by a human

- Prescribe provisions for operating a highly automated vehicle from the outside
- Define when remote driving turns into self driving by a vehicle



# Section 3, Operating vehicles from the outside by a human

Prescribe provisions for operating a highly automated vehicle from the outside

Why?

- Clear rules are always better than debating on differences in interpretation



# Section 3, Operating vehicles from the outside by a driver

Define when remote driving turns into self driving by a vehicle

Why?

- As technology develops remote driving and driverless driving may not differ much
  - short distance summon (e.g. 6 m at a parking lot – direct vehicle visibility by a driver) vs long-distance summon (e.g. from home to the office – no direct vehicle visibility by a driver) though both initiated by pressing a button on an electronic device



# A process to develop a non-binding instrument

## WHO?

**It is a process to be fully “owned” and led by WP.1 (no change to status quo)**

- WP.1 will discuss policy papers as received
- WP.1 will consider and negotiate formulation of statements, recommendations or draft legal provisions of the non-binding ancillary instrument
- WP.1 will take decisions (it is the only body with a mandate to do so)

## Support?

The work of WP.1 can surely benefit from expert support in preparing drafts for considerations, negotiations and discussion at WP.1 sessions

## Therefore

A proposal to request secretariat working with country experts to prepare policy papers, draft provisions, etc. in between WP.1 sessions

**Important! Drafters draft at request of WP.1, they do not agree, negotiate, they are not referred to, they only attempt to prepare as a team sound drafts for WP.1 to work with**



# A process to develop a non-binding instrument

## HOW?

A two-step approach for developing the instrument(s):

**Step 1:** Elaborate on policy questions and find answers to them

- Hold round tables in search for answers (when necessary and decided by WP.1)

**Step 2:** Prepare draft legal provisions (or maybe only recommendations/principles/statements) based on step 1

## Draft legal provisions vs recommendations/principles

Section 1: Legal framework in place (Conventions) – set of recommendations/guidelines/agreed statements may be sufficient to help address commercialization and use of highly automated vehicles in accordance with the general rules in the Conventions

Section 2: Legal framework missing – creating a (general) legal framework in a medium term can be very helpful – agreeing on statements but drafting them in a form of legal provisions to be included in a non-binding instrument might be an effective way forward (define driverless driving, rules for riding, use of hybrid steer, infrastructural changes.....)