Note by the secretariat

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Automated / autonomous vehicles

Background:

Already today technologies for automated /autonomous driving appear on the market. Systems in the vehicles that automated or even autonomous control in the driving direction are today already built in a high number of our vehicles. This are systems like ABS where the vehicle regulates autonomous the brake force at the wheels when it comes to a blocking of the wheel during braking or even a more dramatic Automated Emergency Braking Systems AEBS for trucks, where the vehicle will autonomous initiate an emergency braking if an obstacle is detected in front of the vehicle and the driver doesn't react. A similar system is cruise control or even now Adaptive Cruise Control (ACC). Here the vehicle automatic keeps a certain predefined speed or even adjusts the speed to the driving situation keeping a defined distance to the vehicle in front or adjusts speed to recognized road traffic signs and speed limits. Within GRRF, discussions on the next level are already ongoing, the lateral control of the vehicle. Stemming from existing systems for Lane Departure Warning that just provide a warning to the driver when the vehicle seems to leave the lane it is a logic next step to let the vehicle automatically follow the lane. Together with systems for Blind Spot Detection, vehicles will be soon automatic changing lanes, avoiding obstacles in their driving path or performing overtaking manoeuvres. All these systems are for the benefit of road safety. Looking on the potential of all these new and upcoming technologies, to avoid crashes and protect not only the occupants but also all participants in road traffic around the vehicle - especially the vulnerable road users - this potential needs to be used to further increase road safety.

Challenges and Questions to be answered:

However, this is linked to a number of questions that need to be answered. Here are just a few examples that immediately come up:

Who will decide, the driver or the system? How will the decision be taken in conflicting situations? What is the 'best driving behaviour' that should be reflected by the system? Shall the software or the software modelling of these automated /autonomous driving systems be certified and by which performance requirements? What communication is needed between vehicles (V2V), between vehicles and infrastructure (V2I) and vehicles to anyone else (V2X)? How to address data privacy? How cyber security? How to deal with the driving rules (1968 Vienna Convention) when there is no driver acting? What with liability? Is the existing infrastructure suitable? What needs to be established at the infrastructure?

A first reaction:

It is not a question for vehicle technology only. A holistic approach is needed, close cooperation and coordination of all the areas and actors involved should be established and we need to start and act now.