China's proposal on GRVA's working mechanism and new working items

China's proposal is aimed to facilitate the efficiency of the IWGs under GRVA by enhancing the coordination of technical requirement and validation methods for ADS, and draw attention to other relevant working items such as ADAS.

1. Good coordination between VMAD and FRAV needs to be established

Both FRAV and VMAD are more or less working on the requirements for ADS from their respective responsibility. For example:

   a) In FRAV, as a general requirement, ADS is required to not violate the traffic laws.

   b) In VMAD, test method for traffic lights recognition and response have been specified, which implies a specific requirement for ADS that the traffic lights scenario is one of the traffic laws that ADS should comply with.

   c) VMAD's scenario catalogue has close relationship with FRAV's work on ODD and ADS feature definition. So, to ensure the requirements both from overall and specific perspective are aligned, deliverables from both IWGs should have *defined interface* for exchange, and both IWGs need create more opportunities to work together in order to figure out how to match each other.

2. Framework for the regulation on ADS needs to be established first

Although FRAV and VMAD are two IWGs that are working separately for the time being, a pre-designed framework for the final regulation(s) would serve as guideline for individual IWGs to work efficiently. GRVA needs to clarify what would be the future framework for ADS regulation(s). It/they might be:

   a) Two interdependent regulations, one is for the technical requirement for ADS, and the other is for the validation methods.

   b) One integral regulation consists of both technical requirement and validation methods for ADS.

   c) Other forms.

On the basis of previous work of the Framework Document and ALKS regulation, one example for regulation framework is proposed as follows. It is recommended that the highway and

urban can share the same overall framework and specific requirements for each could be varied.

> 1 General requirements
> 2 Dynamic driving task execution (specific requirements of each feature, such as highways, urban)
> 3 Fail-safe response
> 4 HMI
> 5 DSSAD
> 6 Cybersecurity and Software Updates
> 7 Functional safety and SOTIF
> 8 Validation methods (simulation, proving ground, real road, etc)

3. Consideration of ADAS

For the time being, the number of vehicles equipped with ADAS on the road is far more than those equipped with ADS, and such situation could be expected to be lasting for quite a long time for now and the near future. However, the priority that GRVA's work has drawn on ADS seems a bit too much compared to ADAS, which has shown its great contribution with evidence to traffic safety and may have more potential advantages in promoting the efficiency and comfort of traffic in the near future. So, while developing ADS regulations, ADAS projects, especially those for warning and systems, should also be initiated, or at least, taken into consideration by listing out working items and figuring out a roadmap. China would like to proposal a research working item on the strategy for GRVA regarding to ADAS regulations, and if needed, China volunteered to daft a preliminary list of ADAS working items for the consideration of GRVA. An example presented as:

> - Driver attention monitoring system;
> - Rear cross traffic alert system;
> - Door open warning system;
> - Intelligent speed limit warning and control system;
> - Around view monitoring system;
> - etc.