Document FRAV-04-08
Submitted by the experts from Germany
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Secretary's note: The following is excerpted from an email submitted by the experts.

Regarding the addressed Topics [in FRAV-04-05-Add.1]:

a. With respect to ODD boundaries, we see that external conditions are mainly relevant for the description. Internal restriction may be more appropriately addressed under other requirements

When looking at points b. and c. and taking the current state of discussion in the FRAV group into consideration, we do have concerns that we as a group do not prioritize work quite as needed to fulfil the task given to us by WP.29 and also to fulfil VMAD's needs. What we see of uttermost importance at this stage is a concept on how to define functional requirements for automated vehicles (hence the name of the group). Not so much the exact requirements, but the idea of a method of how to establish them.

There are two basic approaches to derive requirements: one is the approach as currently followed, collecting requirements from the group and clustering them. This is a so-called bottom-up approach. It is relatively fast in the first place, yet requires a lot of structuring, discussing, and reconsidering the individual (~ 140?) requirements.

The other basic approach is the so-called top-down approach. This means: take the central requirements for automated vehicles, e.g. from the WP.29 framework document, and detail those requirements until they have reached a certain quality. After each step of new details, the number of requirements increases, but since we would start from the central one requirement (e.g. the vehicle should not cause accidents), we would be sure that we do not forget something. Therefore, the top-down approach is usually considered as good practice.

We tried to describe this process including examples in the document FRAV-03-03, available on the website. We also believe that this method would make the operational safety sections of the 05 document redundant – most of the "execution of dynamic driving tasks" section would then also be redundant: It is not of much importance how exactly the driving is done and what exactly e.g. the sensor ranges are etc., it is much more important to specify what the vehicle should NOT do, e.g. what accidents it should not suffer from.

The bottom-up approach may be of great value when there are already requirements derived by a top-down approach (e.g. then considering the triangular approach: is there a need for inclusion of a restriction under ODD descriptions, a function necessary on an ADS or is an operational performance requirement needed?).