

R55: Performance vs. Requirements

- The informal working group on regulation 55 (R55) is asking GRRF for comments and guidance on a principle and structural matter with the R55.
- This presentation will show the issue and give a proposal for some structural changes.

R55: Performance vs. Requirements

- At type approval regulation 55 applies to a single vehicle or a single component
 - It then governs what **performance** will be certified
 - The requirements to be fulfilled in terms of geometry and load carrying capacity are given in annex 5, 6 and 7.

R55: Performance vs. Requirements

- A process to develop a new coupling may be seen as a number of steps
 - Decide what class of coupling
 - main text of R55
 - Decide capacity, i.e. D , D_c , V , U , S and A_v
 - For some classes consult annex 5
 - Check test force requirement, i.e. design/test loads
 - Annex 6
 - Check any standardized dimensions, articulations angle, installation limitation, ... requirements
 - Annex 5 and 7
 - Design and test
 - Certify performance

R55: Performance vs. Requirements

- In operation two or more vehicles controls the performance needed, i.e. requirements.
- To know the performance needed is the same as to say what force will in operation appear in the couplings.
- In order to have safe and common utilization of the certified performance we need to have an agreed way to estimate forces in operation.
 - This agreed way is the D- and V-value formulas in the main text of R55
 - Those are valid for combinations of two vehicle
 - A combination of rigid truck + dolly + semi-trailer is not covered.

R55: Performance vs. Requirements

- New transport systems are developed and new multi-vehicle combinations are put into operation.
 - One example is the European Modular System, EMS
- In order to correctly utilize and not to overstress the coupling equipment additional agreed formulas need to be added to R55.

R55: Performance vs. Requirements

- This procedure to agree:
 - How performance is verified and certified
 - How performance may be utilized

... has been and is sound and common practice in many areas of industry
- I.e. R55 is from this perspective sound
- But it needs to be augmented.

R55: Performance vs. Requirements

- A proposal is made to group all those agreed formulas in a new Annex.
- The content of that Annex is needed to set the boundary for utilization of certified performance.
- At operation it is a prerequisite that this Annex is observed and applied.
 - The new annex defines how the certified performances may be utilized.
 - The formulas shall reflect the envelop of the force generation mechanisms at operation.

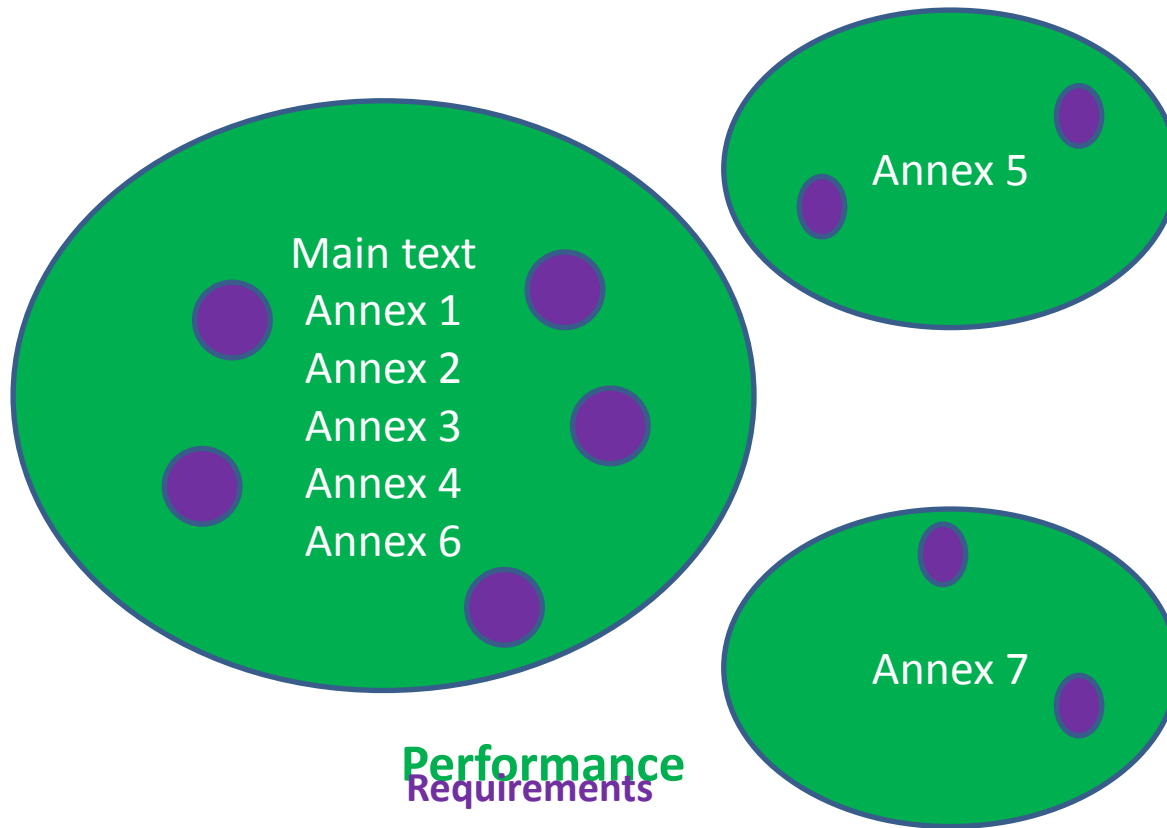
R55: Performance vs. Requirements

- Adding the new formulas enables the legislator to keep in control of the safety level as new vehicle combinations are introduced.
- The new annex brings a clean and comprehensible structure to the regulation from this perspective.
 - An answer to the question “How may I use this installed coupling?” is found in the new annex.
 - There is no need to look everywhere in the regulation.

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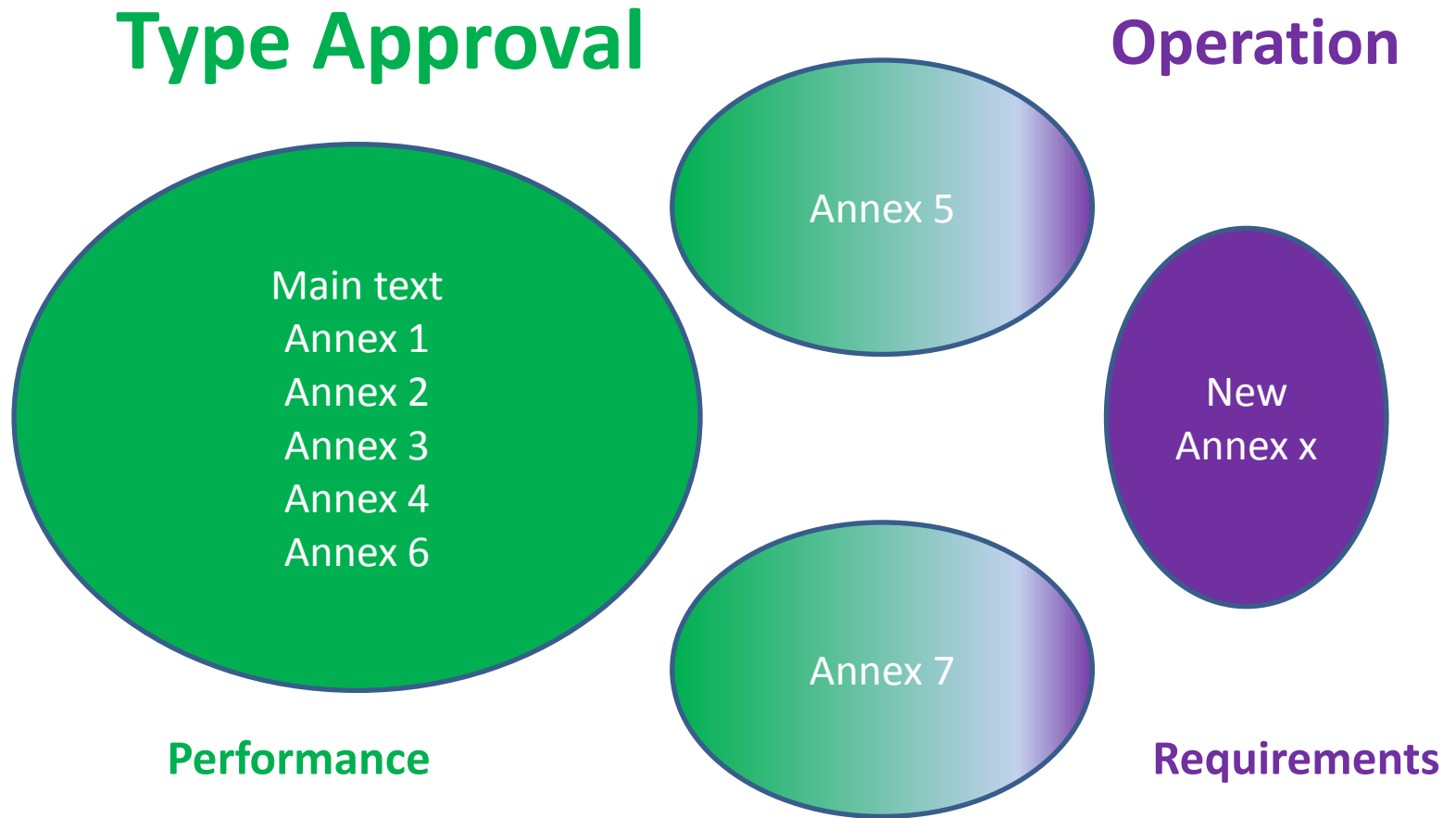
As is

Type Approval
Operation



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As proposed



R55: Performance vs. Requirements

- The proposed structure will give an opening for the legislator to stay in control of the boundary conditions of utilization in many respects
 - New combination types
 - Extreme transports
 - Performance validity
 - Speed restrictions
 - ...

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Thank you for the attention!