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 form 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.
R55: Performance vs. Requirements

As is

Type Approval

Operation

Main text
Annex 1
Annex 2
Annex 3
Annex 4
Annex 6

Annex 5

Annex 7
R55: Performance vs. Requirements

**As proposed**

Type Approval

- Main text
- Annex 1
- Annex 2
- Annex 3
- Annex 4
- Annex 6

Performance

Operation

- Annex 5
- New Annex x

Requirements

- Annex 7
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
  • ...
  •
R55: Performance vs. Requirements

Thank you for the attention!