

VDA

Verband der
Automobilindustrie

VDA-Position on Crash Compatibility

April 2006

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- Increased self protection of passenger cars is the main reason for the continuous trend of reduced number of fatalities.
- Potential compatibility improvements must not compromise self protection. Current self protection level shall not be reduced.
- Geometrical alignment provides additional potential to further increase safety in car-to-car collisions, creating load paths between the colliding vehicles. This shall be the primary step for assessing compatibility.
- The geometrical alignment requirement may be based on geometrical measurement as long as no final applicable dynamic evaluation method is defined. The evaluation of geometrical alignment shall assure that structural engagement and sufficient support is created in the common interaction zone as specified in sections below.
- A dynamic evaluation method may be based on full-width restraint test with load cells assessing forces and/or deformations. The applicable evaluation criteria shall have a strong correlation with improved partner protection without degrading self-protection.
 - The interaction area should be the common zone for structural interaction as specified below.
 - The evaluation should assure that sufficient support is created.
 - In case of force measurement, an upper limitation of force should be avoided due to the draw backs in self protection.
- However, for individual secondary structures (e.g. blocker beams, sub frames), which may not be identified by the full-width restraint test, an optional test or assessment method may be applied.
- If, in the future, new test or assessment procedures are provided, they shall be considered under the objectives of this statement, especially regarding self and partner protection.

Common Zone for Structural Interaction

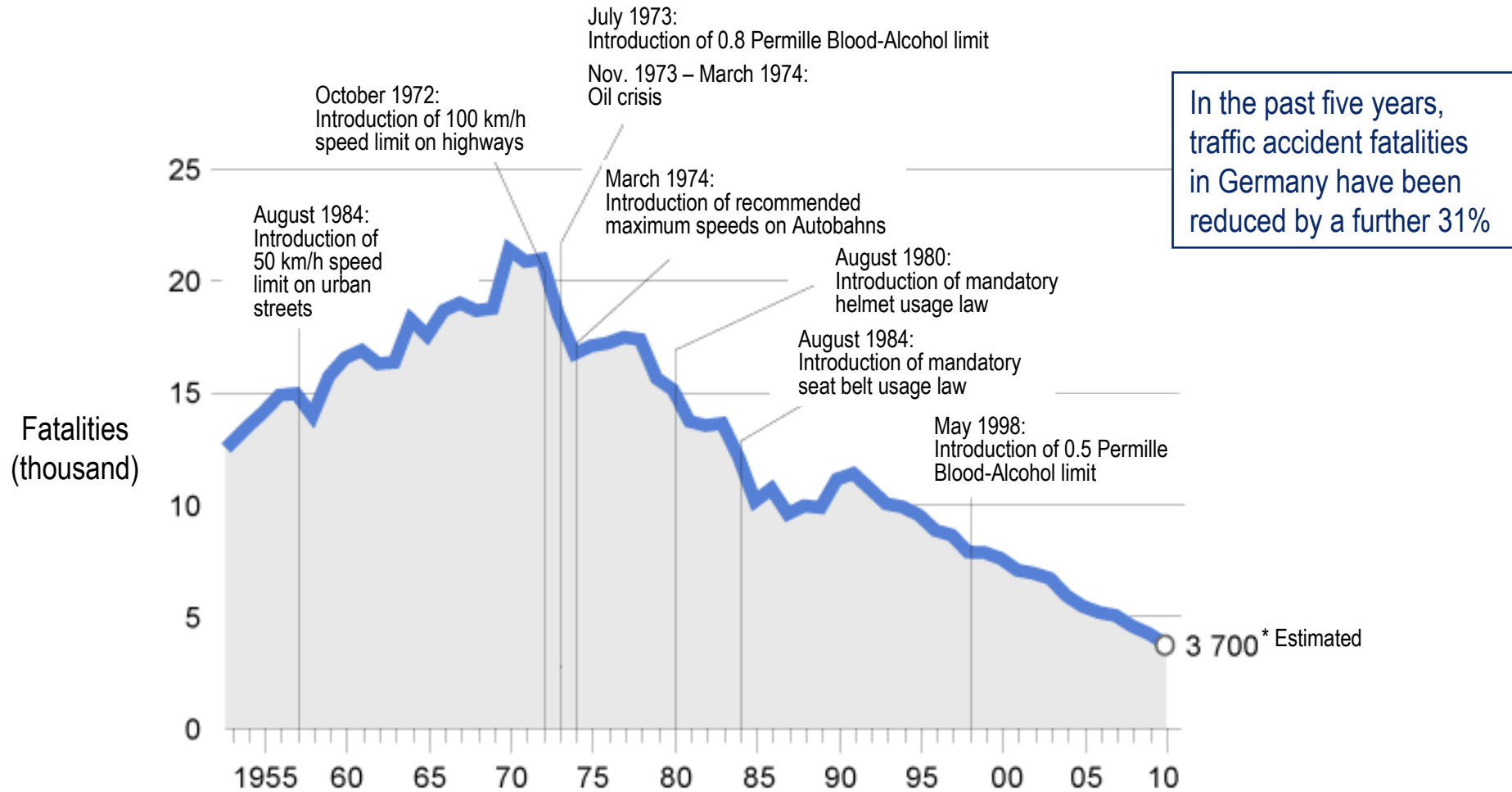
- 1) The presence of structures within a common zone for structural interaction (between 330 and 580 mm of ground clearance) needs to be confirmed for all vehicles including trucks, SUVs/LTVs, Sports Cars and Sedans).
- 2) Structures above the zone should not be penalised, providing sufficient support is present within the interaction zone.
- 3) Structures below the zone should be credited, providing sufficient support is present within the interaction zone.

Assessment methods should be defined in accordance to points 1,2,3.

VDA-Position on Current Developments in Frontal Impact and Crash Compatibility

January 2011

Improvement in German traffic accident statistics



Source: Statistisches Bundesamt

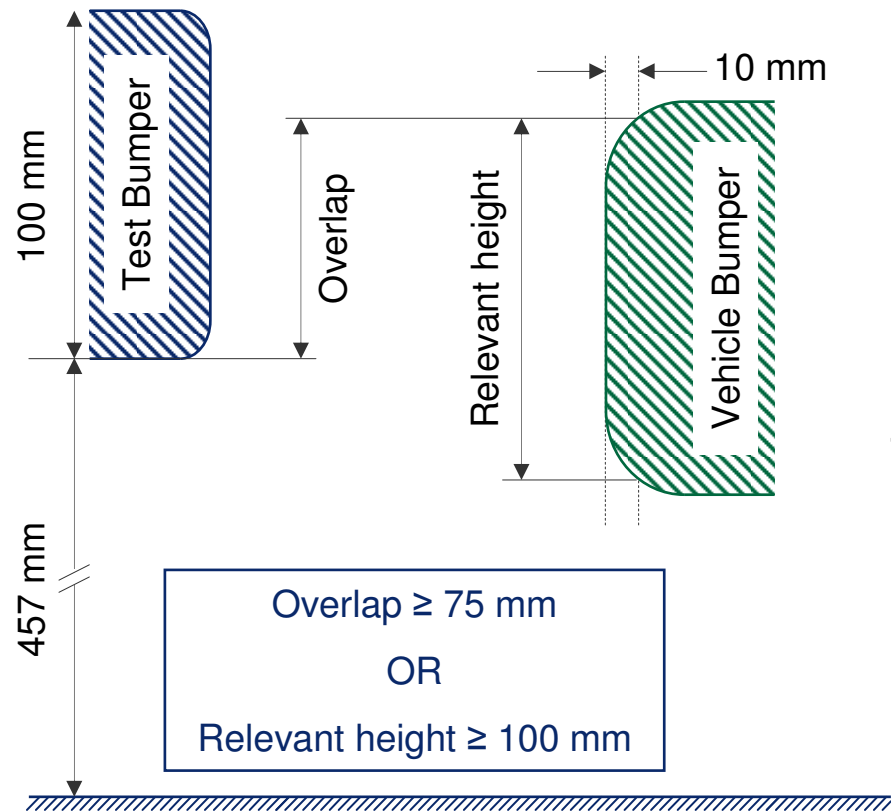
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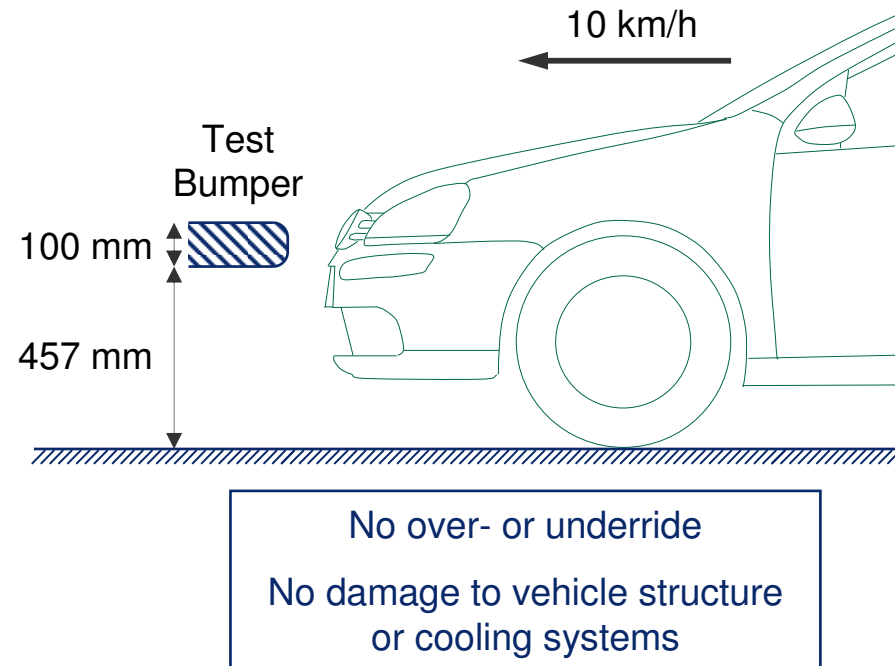
Changes in the assessment of vertical alignment

RCAR bumper test introduced in January 2010

Geometric assessment:



Dynamic test procedure:



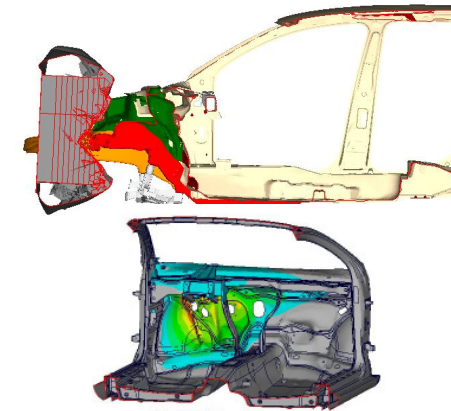
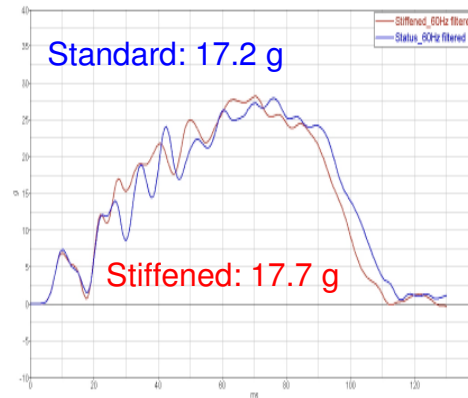
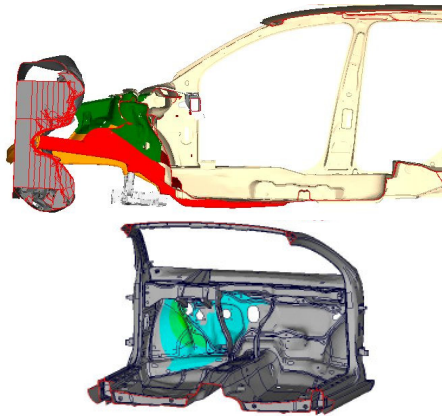
Source: Gesamtverband der Deutschen Versicherungswirtschaft

The Progressive Deformable Barrier (PDB) does not guarantee the current self-protection levels

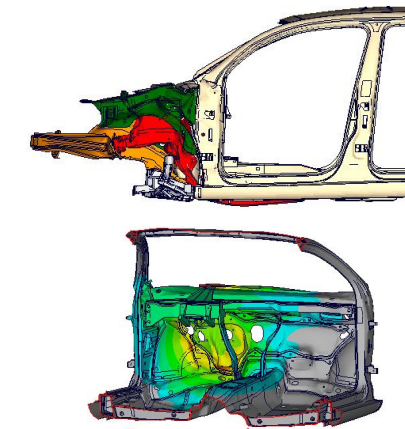
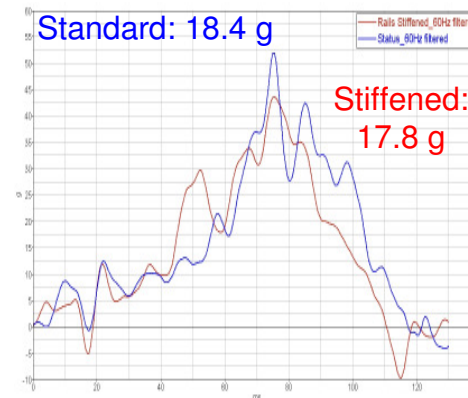
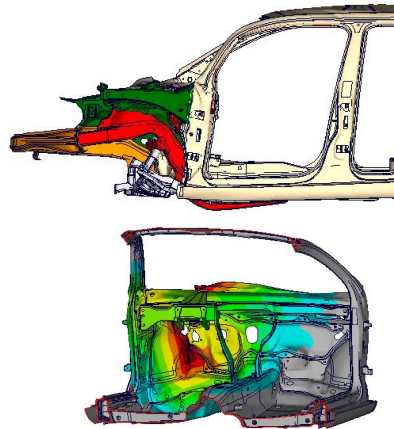
Stiffened Structure (+30 kg)

Standard Structure

PDB @ 60 km/h



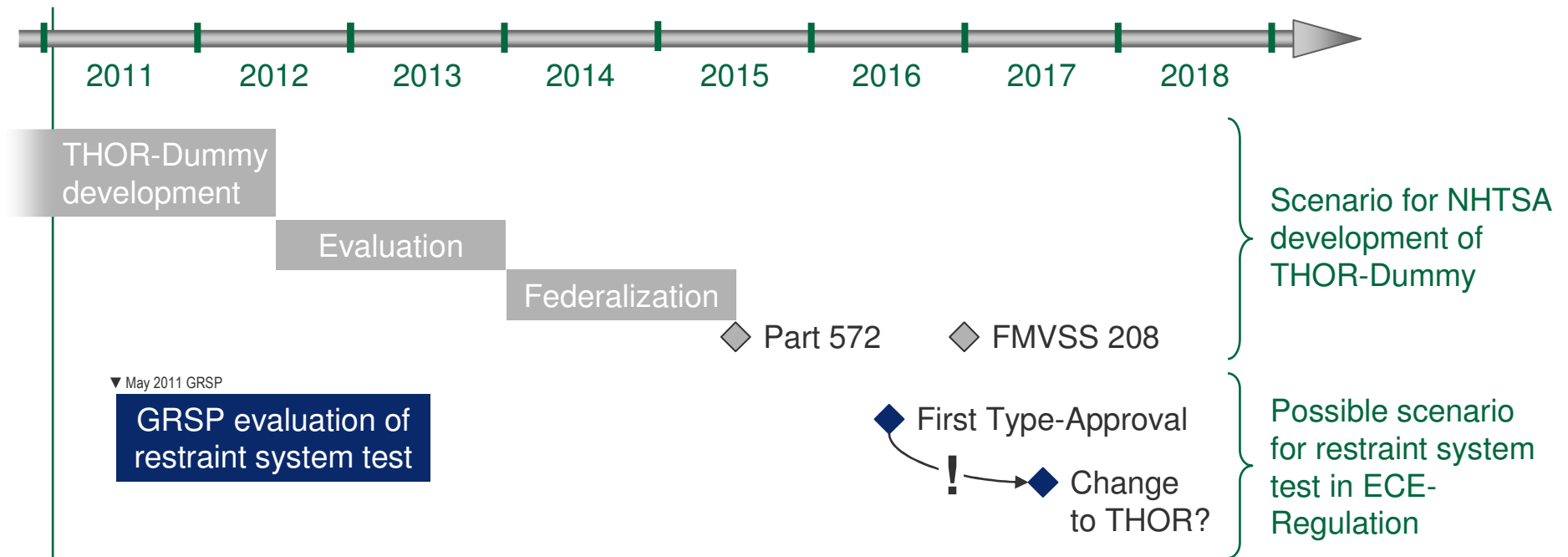
ODB @ 64 km/h



Longitudinal structures changed to S420MC and thickness increased by 100% to 200%

Source: "Assessment of Compatibility for both Self- and Partner-Protection" VDI-Tagung, Berlin, 2007.

A new restraint system test should include improved, globally harmonised dummies



Improved dummies are necessary to achieve the goals of an ECE restraint system test. These should be globally harmonised.

The dummies are integral to the test and must not be changed after its introduction.

The interim use of a Hybrid III Dummy would be inappropriate. A new regulatory test should not be introduced until the THOR Dummy is available.

Summary

- Accident statistics show continued improvement
→ further changes to vehicle regulations should be well considered
- Further improvements in geometric alignment and structural interaction are expected from new RCAR Bumper Test
- The PDB may lead to a reduction in self-protection levels
- A new restraint system test should only be introduced with improved, globally harmonised dummies