FIMCAR Workshop

Summary
FIMCAR Accident Analysis

• Analysis of recent cars (at least ECE R94 compliance)
  – Overlap:
    • large overlap results in high risk for acceleration type loading
    • small overlap (corners and middle) results in intrusion type injuries
  – Main frontal impact issues observed
    • structural interaction
      – low overlap
      – under/override
    • compartment strength
      – no evidence that issue is larger for smaller cars
      – main problem for car-to-HGV and car-to-object accidents
**FIMCAR Global Strategies**

**Priorities**

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<th>Assessment requirements</th>
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<tr>
<td><strong>Structural Interaction</strong></td>
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<td>Alignment</td>
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<td>Priorities For FIMCAR</td>
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FIMCAR Global Strategies

Assessment criteria for test procedures

• Do the metrics address identified frontal impact issues?

• Do the assessment results reflect real world performance?

• Is the test severity appropriate?
External Advice / Requirements

• New car design/concepts need to be taken into account
  – Carbon footprint
• Assessment procedures should avoid too stiff cars
• Self protection shall not be reduced
• Improvement structural interaction recommended
• Improvement of management of energy absorption capabilities recommended
• Restraint system test should involve improved dummy
Full Width Test Procedure

• Different pulse
  – restraint system test
  – accident sensing
• Assess load path for geometrical compatibility requirements
• Rigid or deformable barrier?
  – harmonisation
  – possibilities to assess secondary load path
  – sensitivity w.r.t. engine dump
• Assessment of secondary load structures
  – not to be restricted
Off-set Test Procedure

- Assessment of load spreading
  - e.g. addressing small overlap
- Assessment of compartment strength
- Selection of PDB
  - ECE R94 ODB unable to assess load spreading
- Compatibility criteria
  - longitudinal deformation of the barrier
  - homogeneous criteria
    - priority for middle area
- External advice
  - harmonisation with IIHS might be useful
  - is compatibility assessment in FW test necessary in addition to PDB?
  - sensitivity of assessment w.r.t. vehicle height
  - investigate influence of mass on metrics
MDB Test Procedure

• Aims
  – Assessing self and partner protection
  – Representing car-to-car impacts
  – Analysis of vehicle mass and front stiffness

• PDB barrier face

• Metrics according to PDB test
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