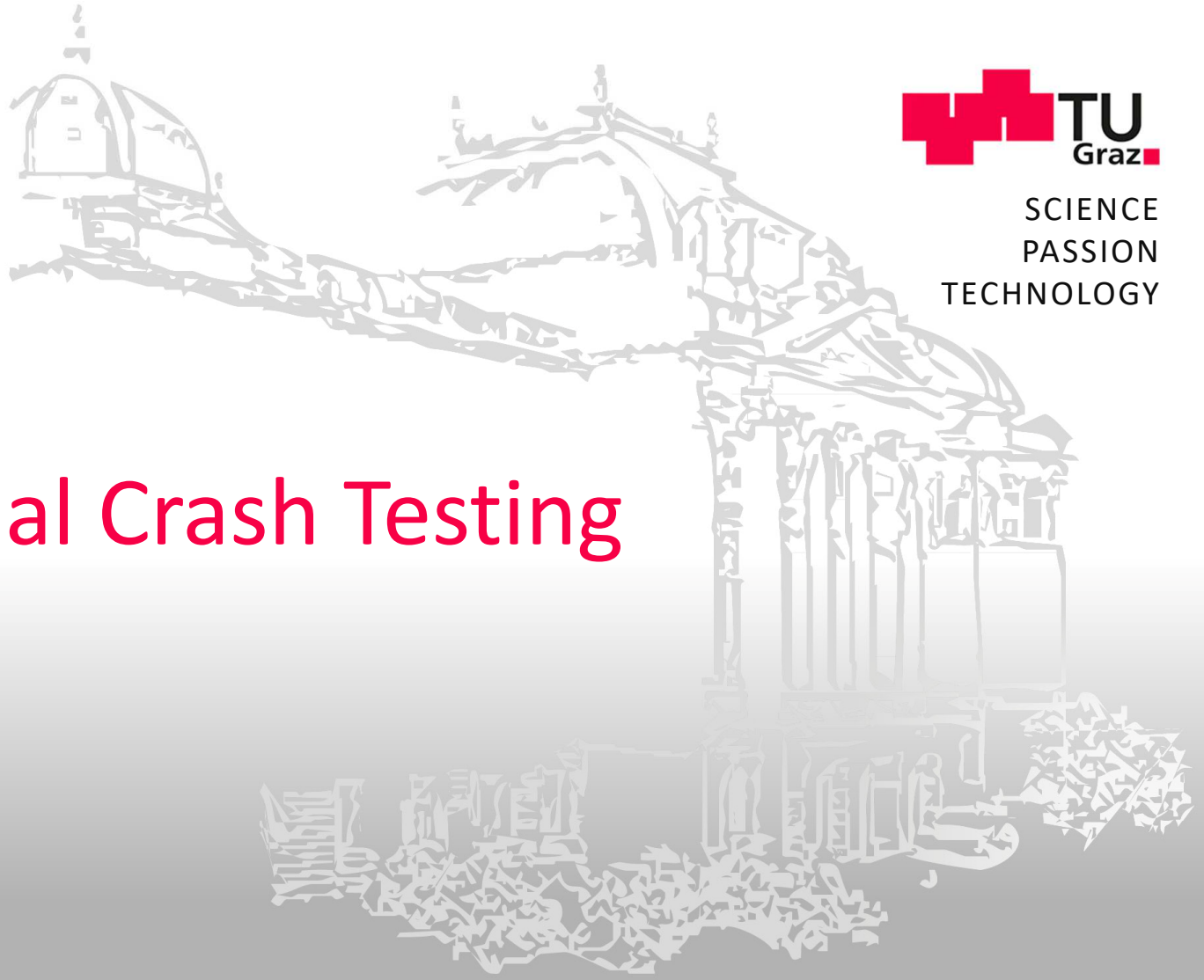


SCIENCE
PASSION
TECHNOLOGY

Task Force Virtual Crash Testing

EqOP Meeting TF-VCT

15.05.2023

ToR

Explore and advance the current state-of-the-art of virtual crash testing to determine and increase its capability as a tool and process to evaluate equitability, including a specific assessment of the state-of-the art virtual human body models, i.e., virtual models of humans, particularly the possibilities for a safety performance evaluation at a higher level of detail.

Task 3 - Virtual Crash Testing ToR

Assess virtual crash testing as a method in concerned regulations to improve equity in occupant protection further, through...

a. mapping the gaps in terms of equity in the concerned regulations that virtual crash testing could potentially fill
→ Fill in Table from Task 1

b. assessing the current state-of-the-art of virtual crash testing tools and processes, e.g., understand the readiness of virtual human body models regarding their validation level of occupant kinematic and potential to predict injury
→ see next slides

c. Review existing ATDs and other tools (incl. injury risk curves and test conditions) and the possibilities they provide to more diverse crash testing
→ Fill in Table from Task 1

d. drafting preliminary global guidelines for virtual occupant models to ensure that they are inclusive
→ Based on equity issues identified in Task 1

e. reaching a common understanding of basic requirements that virtual crash testing models should fulfill, particularly regarding car occupants of different sex and size
→ tbd

f. reviewing whether current regulations are sufficiently flexible to allow the new technical developments resulting from the new assessment possibilities created by virtual crash testing, for example for advanced adaptive protective systems
→ tbd

g. assessing the possibilities, and shortcomings, of virtual crash testing when it comes to different kind of injuries, new types of crash test, (*VRUs),* misapplication, HBMs.
→ Fill in Table from Task 1 and collect potential issues / hurdles for virtual testing as a starting point

h. Definition of requirements for simulation models and procedures to enable virtual testing
→ Fill in Table from Task 1 to define priorities / usecases for which requirements should be defined

First Tasks of Task Force „Virtual Testing“

Fill in Table of joint Task 1

- Potential Usage of HBM (benefit compared to ATD)
- Potential of Virtual Testing

Parallel task: assessing the current state-of-the-art of virtual crash testing tools and processes, e.g., understand the readiness of virtual human body models regarding their validation level of occupant kinematic and potential to predict injury

- Virtual Testing Workflow
- Validation process of vehicle / sled / component models
- Qualification process of occupant models
- Integrity of models
- Assessment criteria

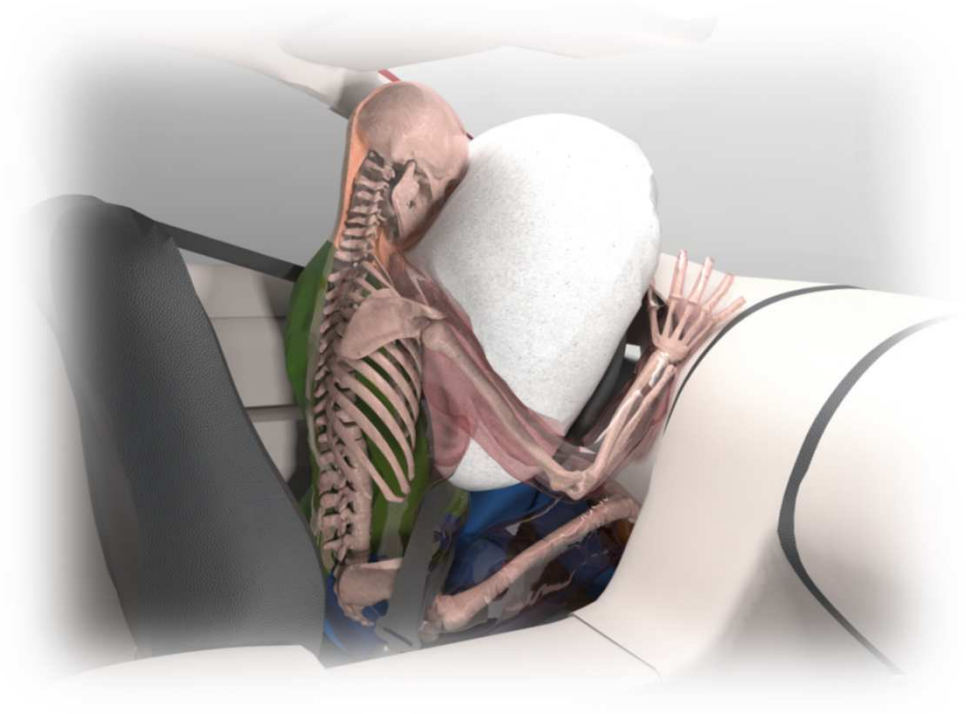
Look also into other areas than safety!

→ Define requirements beyond the state of the art

Who can contribute? (Please send an email to Philipp.Wernicke@bmw.de)

Hybrid Workshop planned for October in Munich (Alternative: Graz)

- Online preparation meetings



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