

First findings of additional research of the NL

GRSP Informal Working Group on Frontal Impact

TNO | Knowledge for business

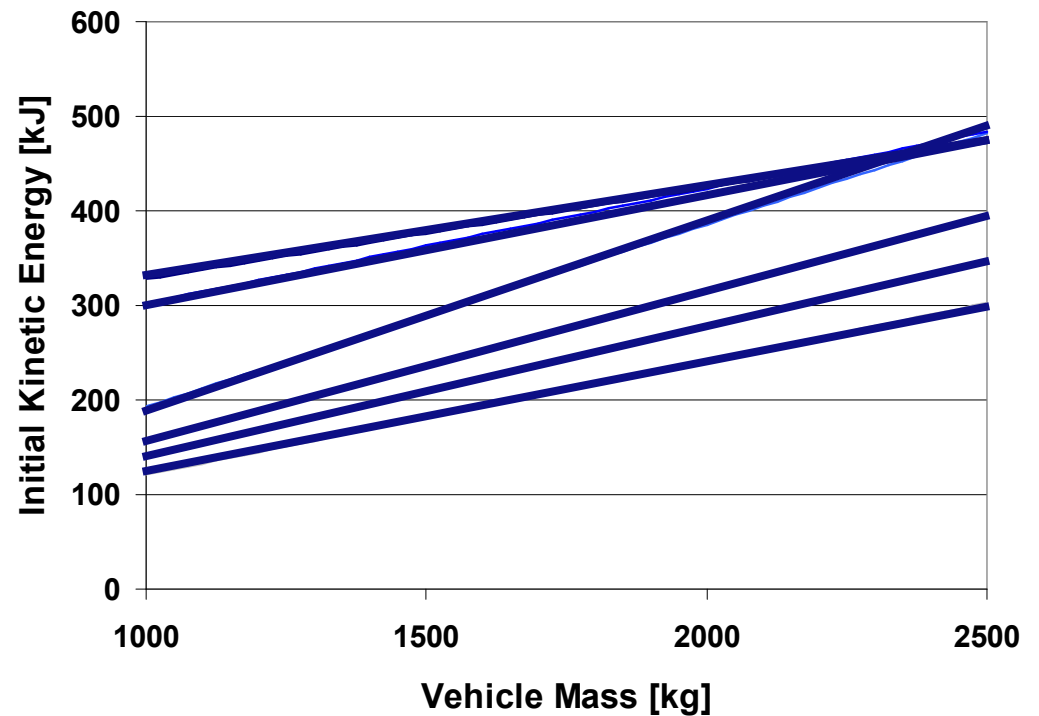


GRSP Informal Working Group on Frontal Impact

Frontal Impact Tests

Initial Kinetic Energy

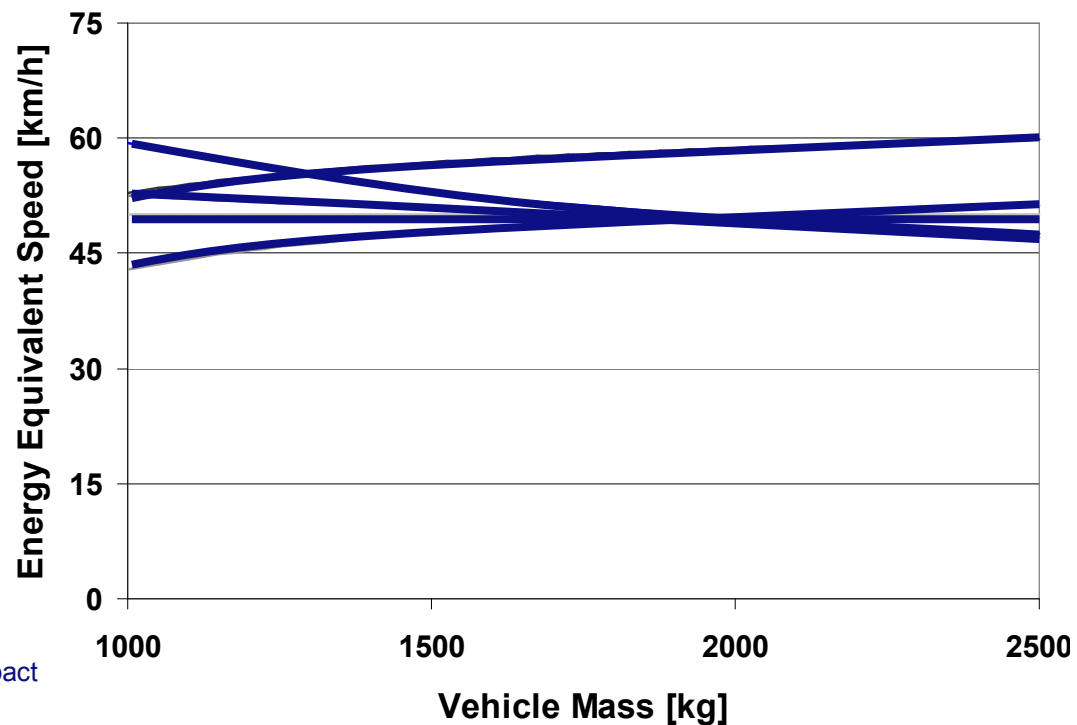
- Baseline test 50 / 50 km/h
- R94 56 km/h
- Euro NCAP 64 km/h
- PDB 60 km/h
- Car-to-car 56 / 56 km/h
- Car-to-MPDB 56 / 56 km/h



Frontal Impact Tests

Energy Absorbed by Barrier

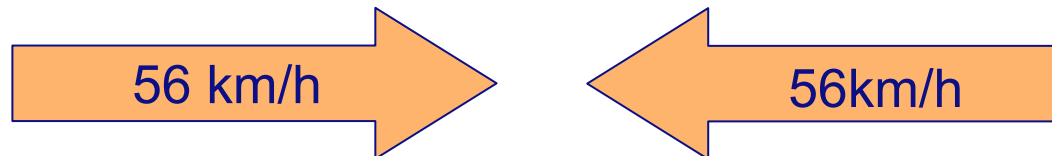
- Baseline test 50%
- R94 ~50kJ
- Euro NCAP ~50kJ
- PDB ~15% (based on VC-Compat data)
- Car-to-car depending on collision partner
- Car-to-MPDB to be determined



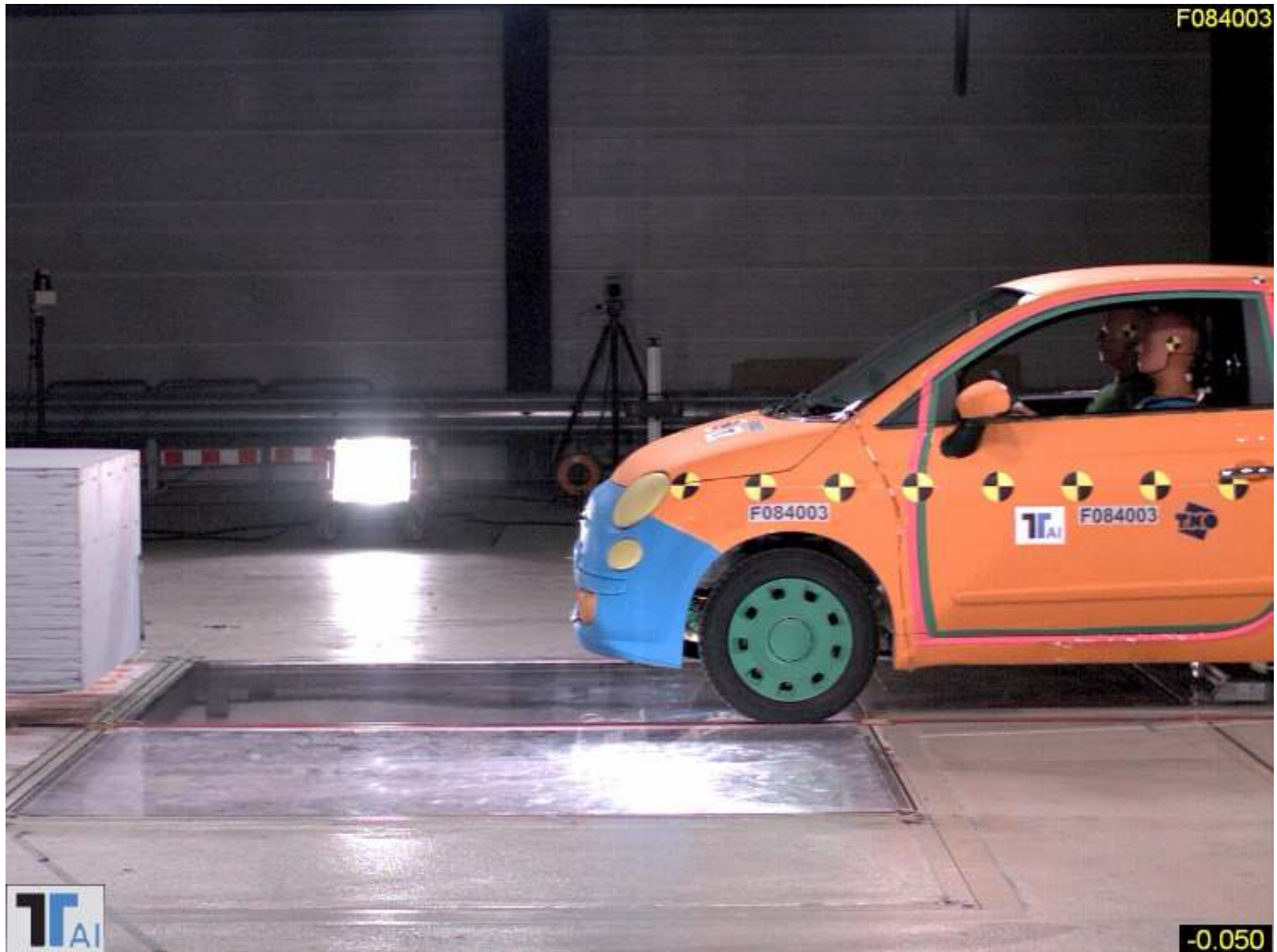
Fiat 500-to-MPDB test

Test set-up

	Fiat 500	MPDB
• Type	1.2 POP LHD	PDB v8.0
• Mass	1225	1487
• Velocity	56 km/h	56 km/h

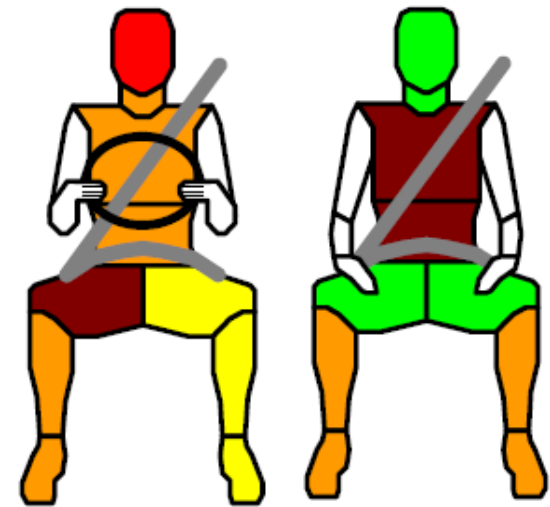
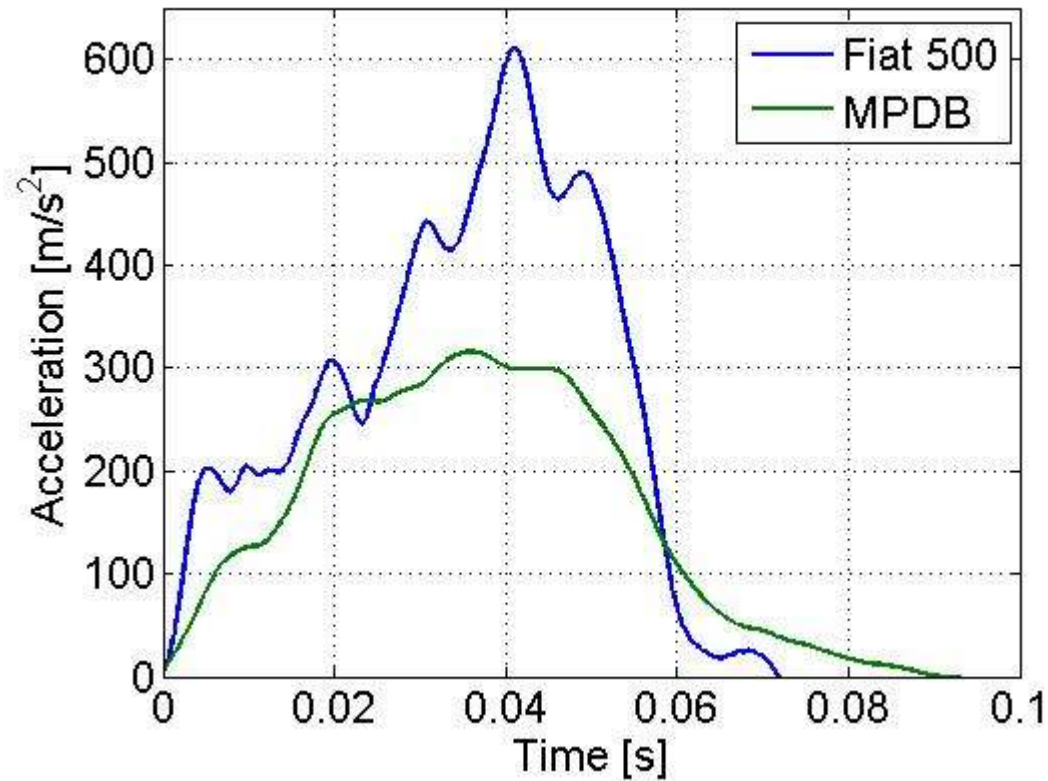


Fiat 500-to-MPDB test




Fiat 500-to-MPDB test

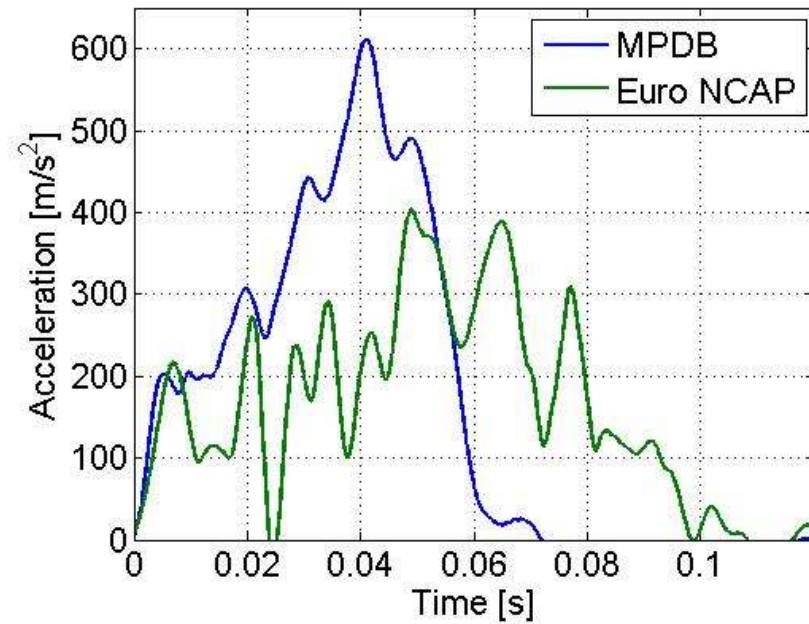
Preliminary results



Fiat 500-to-MPDB test

Comparison

	Euro NCAP		MPDB
• Impact velocity	64 km/h		56 / 56 km/h
• Initial kinetic energy	194 kJ		330 kJ
• EES	55 km/h		56 km/h



Conclusions

- The Fiat 500 was not designed for this test
- The Fiat 500 to MPDB test was shown to be severe; some injury values were over the R94 limit and the compartment could not cope with the forces
- A more detailed analysis and comparison of the following tests will be presented:
 - TNO test: FIAT 500 to MPDB
 - ADAC test: FIAT 500 to Audi Q7
 - Euro NCAP: FIAT 500