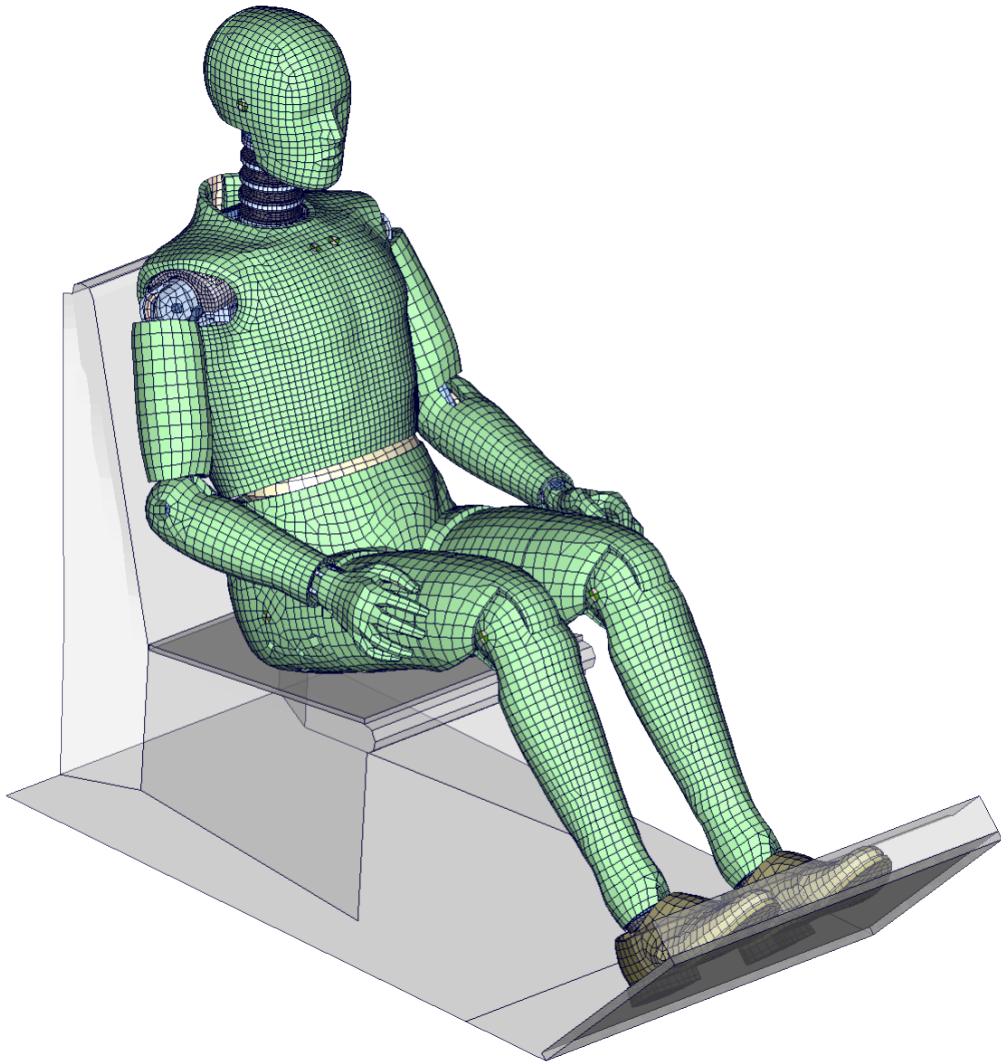


# ATD MODELS

*FE - Dummy Solutions*

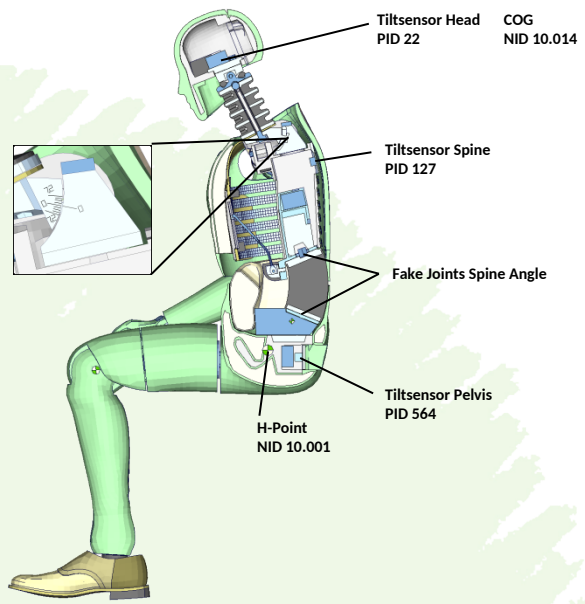


**ATD - Hybrid III Dummy Family**

LS-Dyna | PamCrash | Abaqus

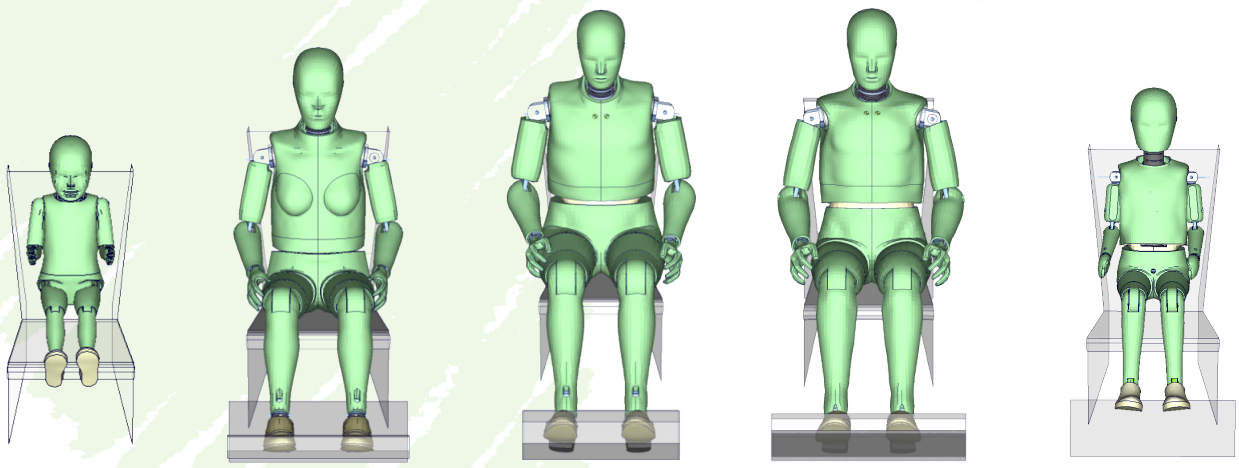
## Salient Features of ATD HIII Dummy Models

- Developed with leading **automotive manufacturers** (Audi, BMW, Daimler, Porsche, VW).
- Physics-based modeling for maximum **accuracy**.
- **Uniform standards** for discretization, nomenclature, and numbering.
- Consistent pre- and post-processing scripts.
- Full utilization of **solver-specific features**.
- Same scripts and methods for all dummies.



## Commercial ATD-MODELS Products

Versions of all models are available for the explicit FE codes ABAQUS\*, LS-DYNA\* and PAM-CRASH\*



ATD-H303

ATD-H305

ATD-H395

ATD-H350

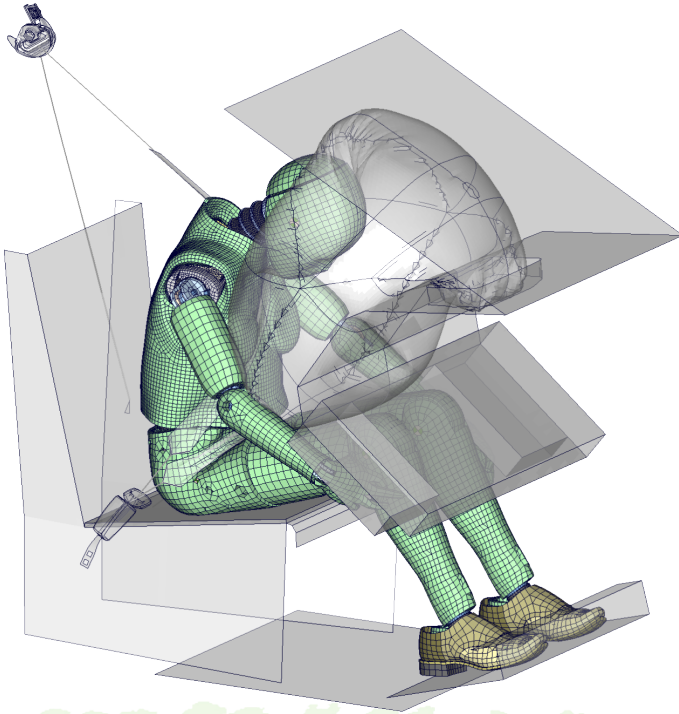
ATD-H306

## Proven and Evolving Dummy Models

- H350, H305, H395: Over 15 years of proven reliability, continuously developed and improved.
- H303, H306, M350 (Pedestrian/Motorbike), F350 (FAA): Recently developed, benefiting from extensive H3 dummy expertise.

\* The trade names are the property of the owning companies.

## Validation and Certification



## Validation load cases derived from vehicle safety design load cases

- Tests defined in cooperation with automotive industry partners
- Sled tests correspond to actual loads used in vehicle design
- Certification tests against real world data
- Quasi-static and dynamic material tests with strain rates up to 400 per second

## Component test

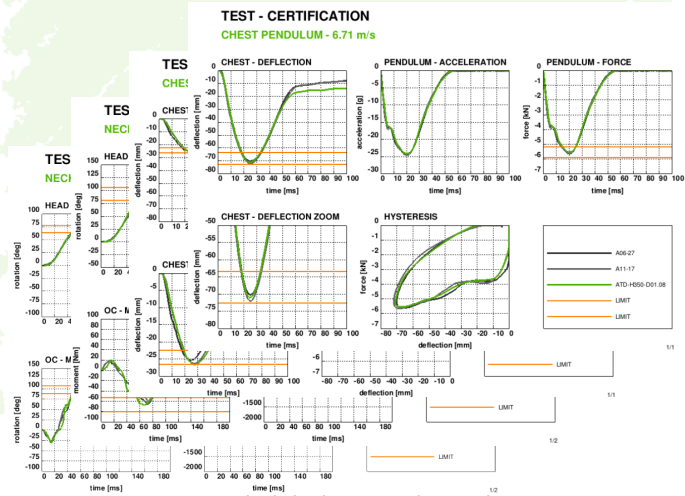
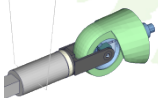
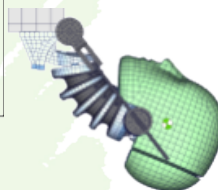
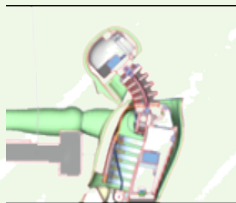
- For relevant body regions
- Derived from load scenarios in vehicle design
- Tests include (selection):

– Head drop

– Chest

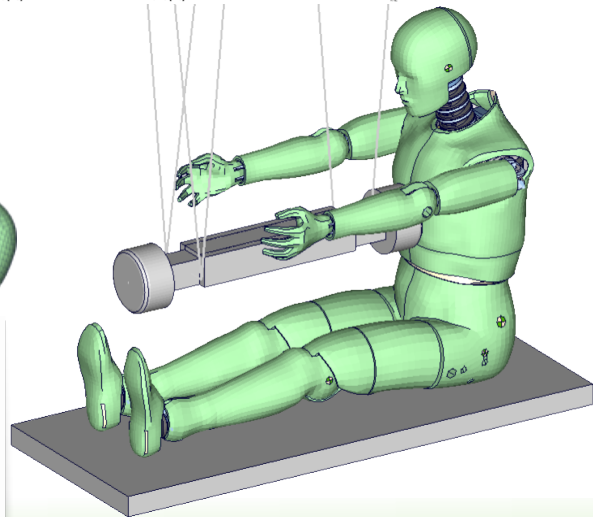
– Neck

–Knee and heel

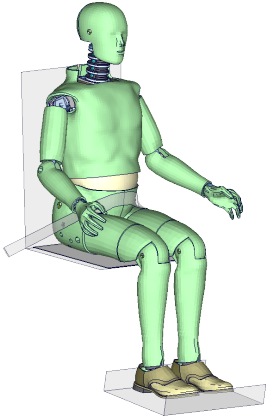


## Scope of Deliverables

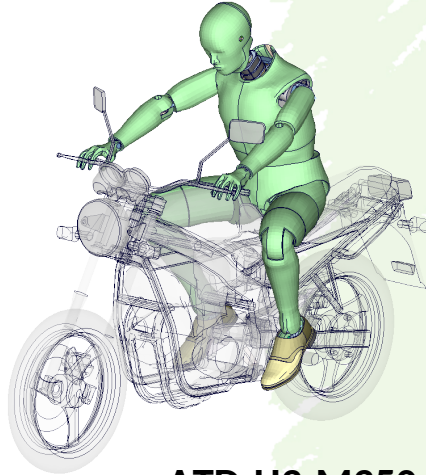
- Renumbered models upon request
- Model certification documentation
- Positioning and seating demo examples
- Comprehensive user manuals



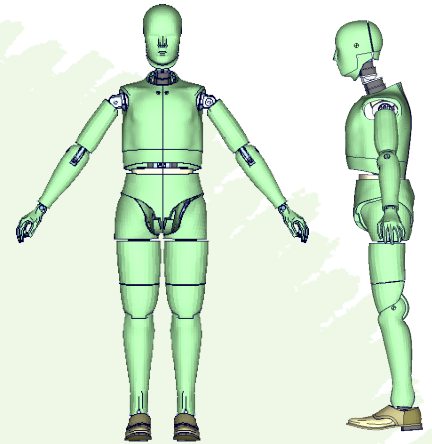
Continuous development of new models and improvement of existing ones



**ATD-H3-FAA**  
(Aviation application)



**ATD-H3-M350**  
(Motorbike)



**ATD-H3-M350**  
(Pedestrian)

## Advantages for Users

- Systematic, assembly-specific title conventions
- Prefixes enable quick adaptation to load case nomenclature
- No overlapping or conflicting numbering → Simplifies pre- and post-processing → Eases selection of parts and groups
- Independent definition of each assembly group
- → Master-referenced definitions (e.g., contact definitions)
- Customization available for individual dummies



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