Selected references

- ESI Group
- University Hospital Pilsen (Czech Republic)
- Charles University (Czech Republic)
- OTH Regensburg (Germany)
- Institute for the Care of Mother and Child (Czech Republic)
- Aalborg University (Denmark)
- Criminalistic Institute in Prague (Czech Republic)
- Tianjin University of Science and Technology (China)
- Vision Consulting Technology (Czech Republic)
- Warsaw University of Technology (Poland)
- John H. & Amy Bowles Lawrence Foundation (USA)

- **APSN** Advanced Passive Safety Network (FP6)
- **APROSYS** Advanced Protective Systems (FP6)
- **MYMOSA** Motorcycle and Motorcyclist Safety (FP6)
- **SIM** Safety In Motion (FP6)
- **MOTORIST** Motorcycle Rider Integrated Safety (FP7)
- **COST TU1407** Scientific and technical innovations for safer Powered Two Wheelers (COST)
- **CZ-BY No. 38** Virtual human models for the prevention, therapy and rehabilitation of shoulder pathologies (ETC Goal 2014–2020)
- **CZ-BY No. 182** Obstetrics 2.0 – Virtual models for the prevention of injuries during childbirth (ETC Goal 2014-2020)
- **AMTMI** CZ.02.1.01/0.0/0.0/17_048/00072 80 Application of modern technologies in medicine and industry (ERDF)

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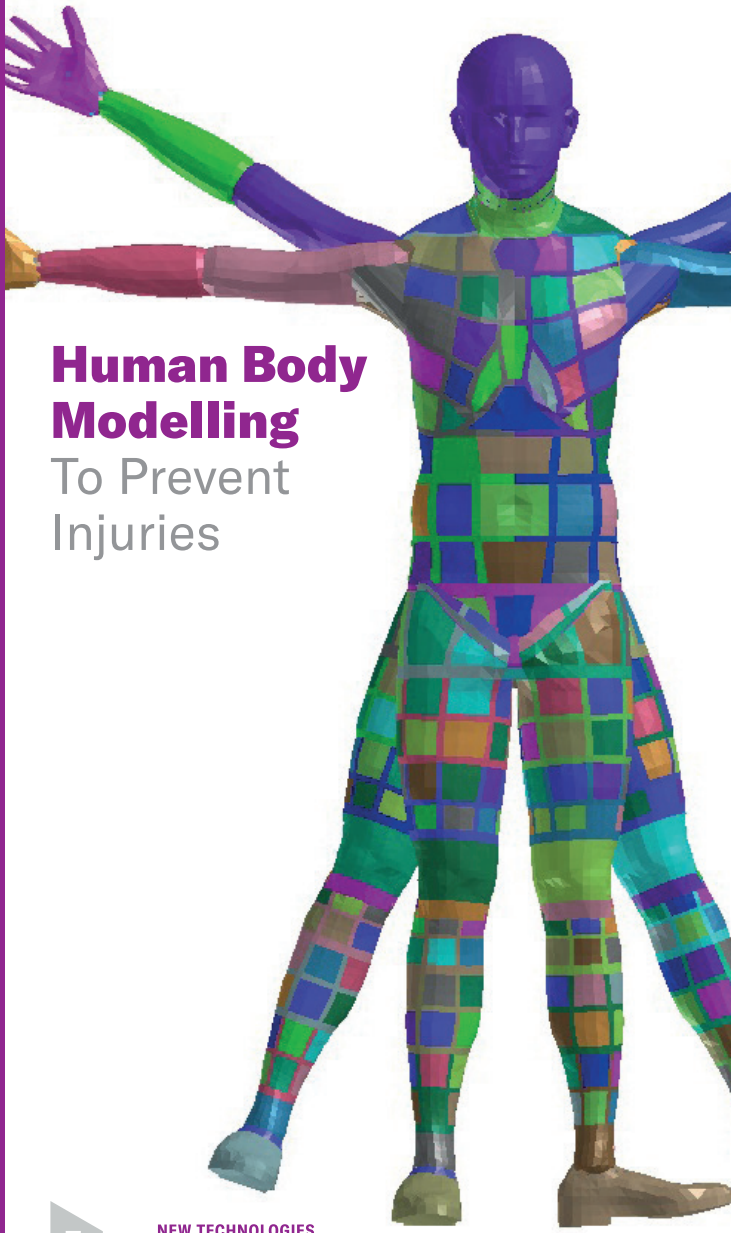

Human Body Modelling
To Prevent Injuries

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Transport

- Models development
- Case and parametric studies
- Injury prediction
- Accident investigation
- Future mobility

Virthuman (VPS module)

- MBS model with compressible segments
- Anthropometric, age and gander scaling
- Simple positioning
- Fully validated
- Multi-purpose application
- Injury prediction based on EuroNCAP

Sport

- Musculoskeletal human body model
- Complex shoulder joint model
- Detailed hand model
- Force measurement using Kistler platform

Anybody modeling system

- Rigid bones, shapes based on MRI and CT
- Real joints anatomy and physiology
- Muscles attachments and trajectories, active model

Healthcare

- Human body – medical device interaction
- Prediction of injury during child delivery
- Influence of forceps, vacuum device
- Manual perineal protection
- Lower limb prosthesis optimization
- Deformable FEM models
- Implicit and explicit simulations
- Highly nonlinear models
- Characterization of soft tissue properties
- Corresponding measurements