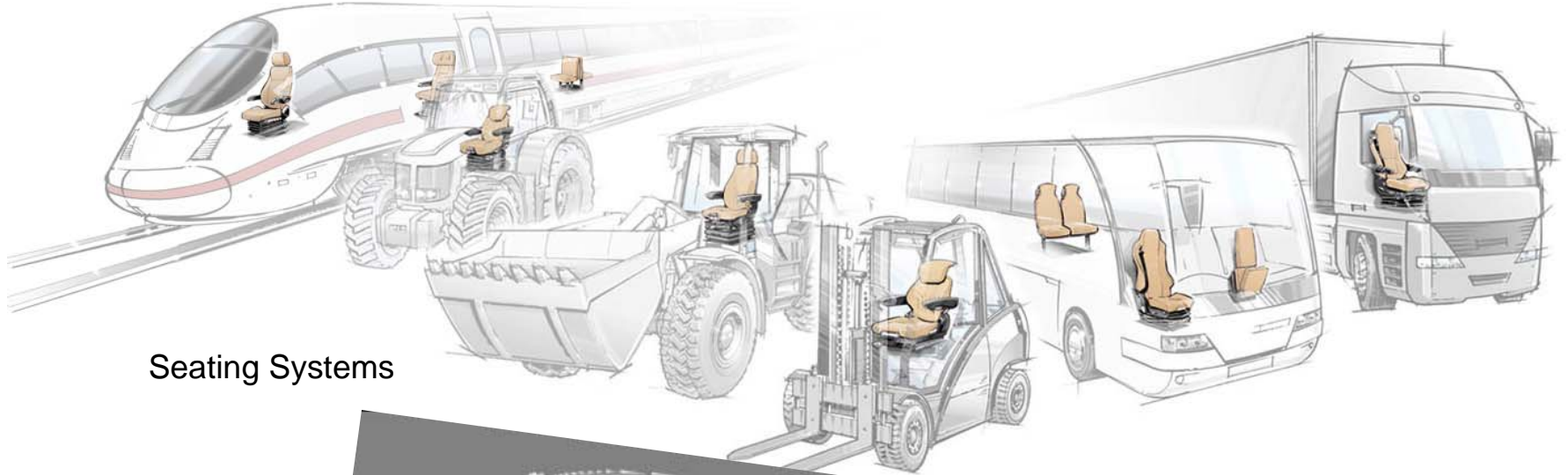


Premium Seat

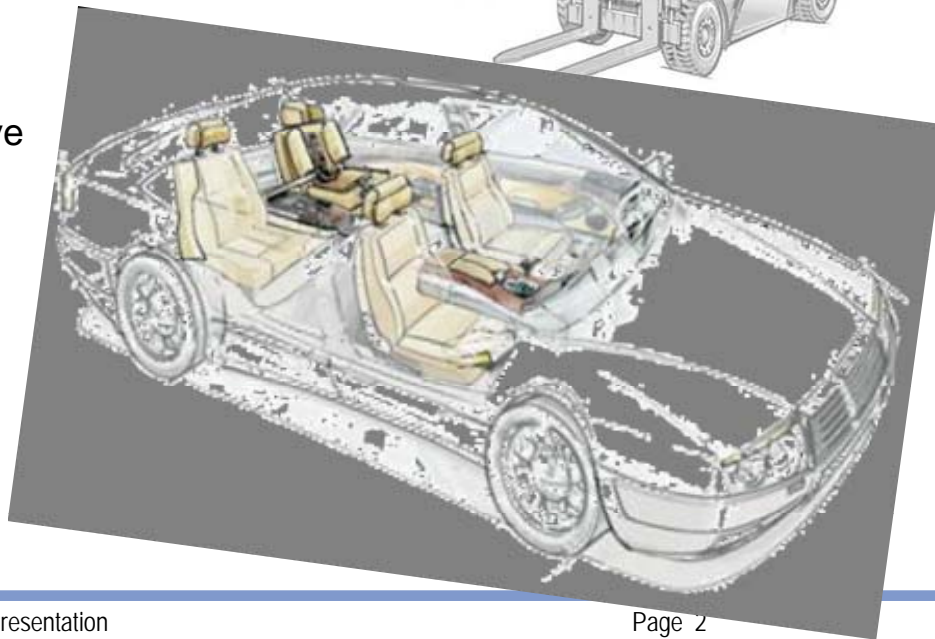


Competence in Seating and Interior

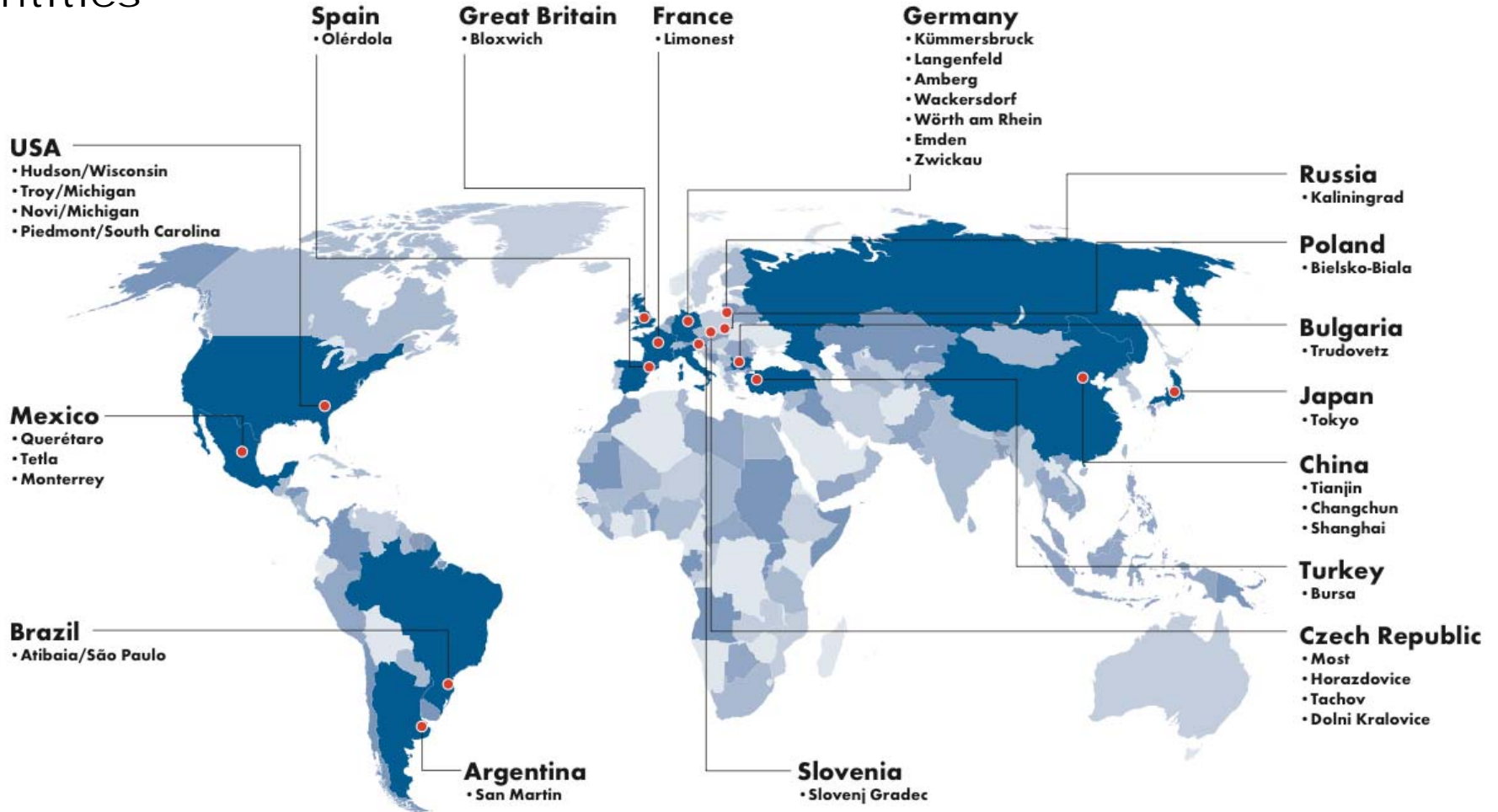


Seating Systems

Automotive



Entities



Customers – The Market Leaders

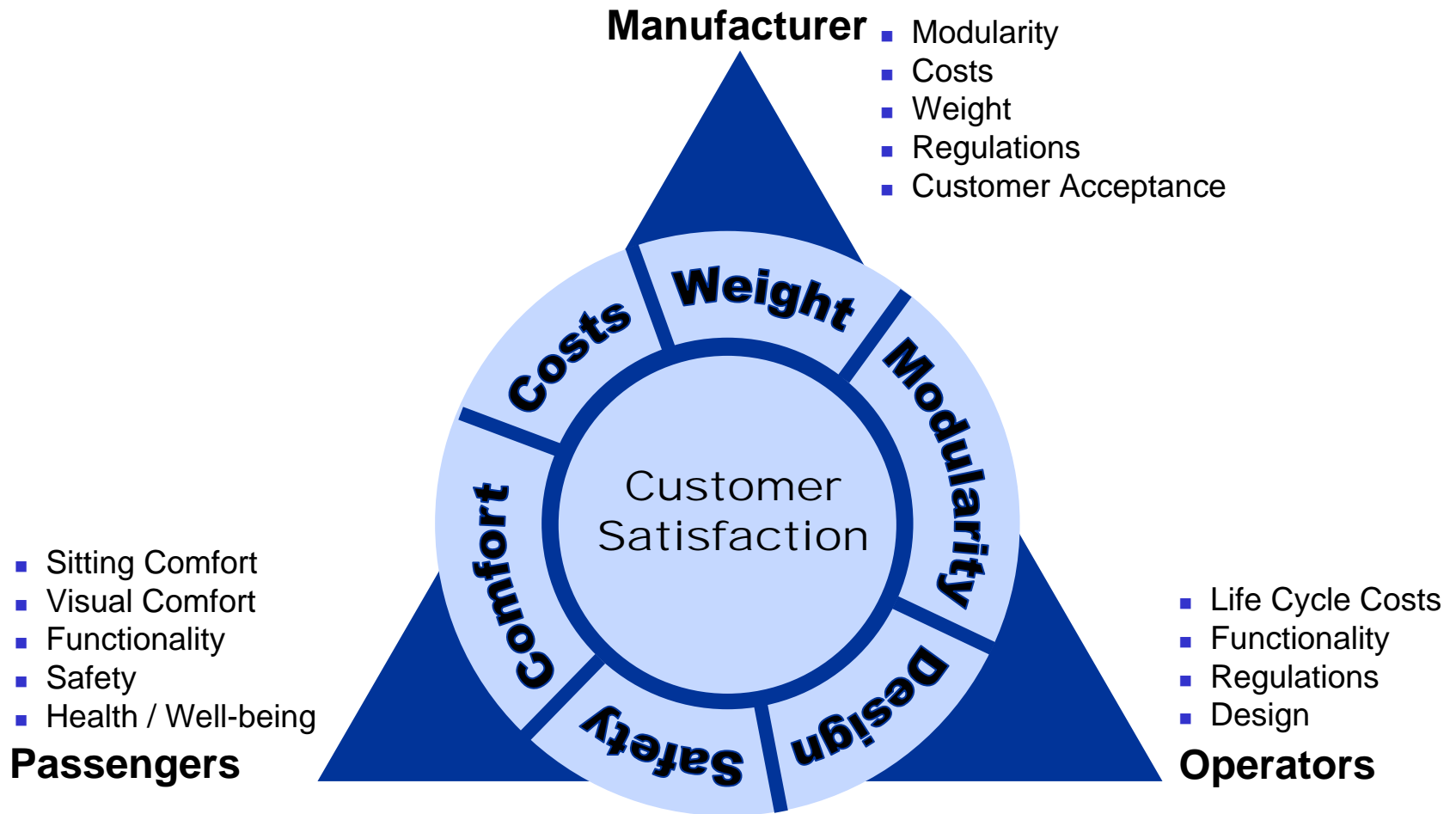
Seating Systems



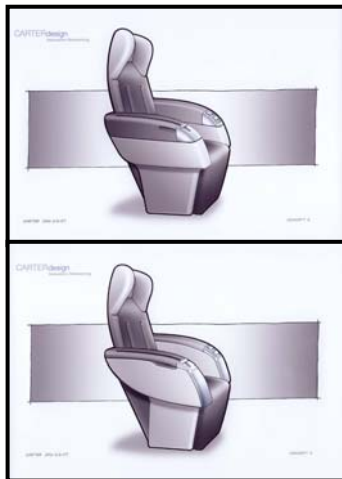
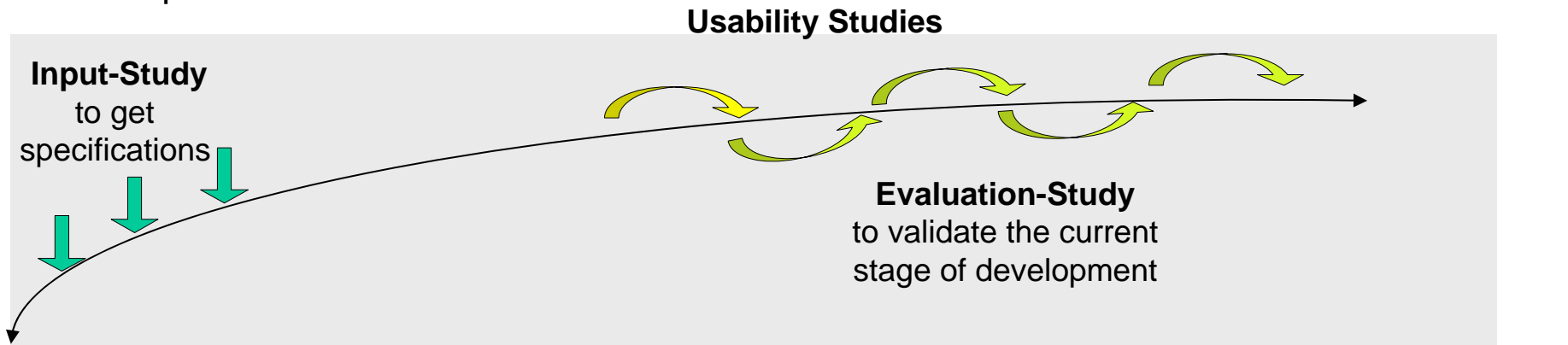
Automotive



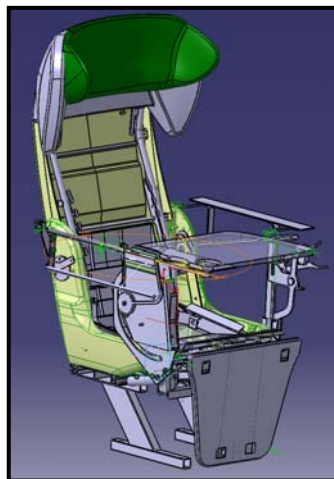
The requirements of all interest groups have to be taken into consideration



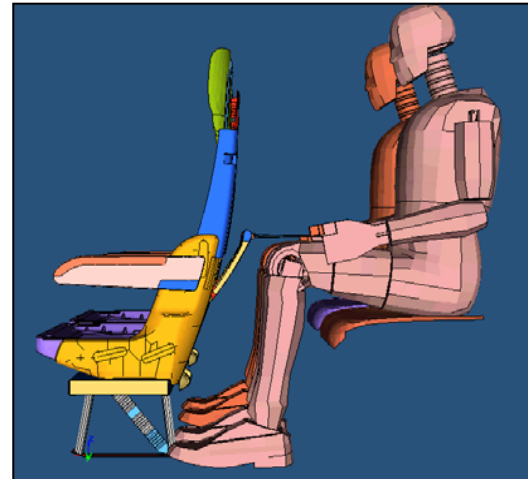
Development Process



Design Sketches



3-D Data Model



Crash Simulation and Real Test



Concept of 3 Seating Categories in Trains

Premium Class



Business Class



Economy Class



The special requirement for the Premium Class was a better differentiation between the categories in the visual as well as in the perceptible seating comfort.

Visual Seating Comfort

Head pillow

- Ergonomically V-Shape design
- Continuously adjustable height up to 100 mm
- For individual head support

Armrest

- Comfortable width of 80 mm

Leg support

- For relax seat position up to 45°
- Additional protective covering



Headrest

- Wide headrest for privacy and support

Covering

- Genuine leather for seat-/backrest cushion, leg support and armrest pad

Lounge Chair look

- Individual 1-Place Seat
- Side cover to the floor
- Easy cleaning

Perceptible Seating Comfort

Head pillow

- Ergonomically V-Shape design
- Continuously adjustable height up to 100 mm for individual head support

Armrest

- Comfortable width of 80 mm

Foldable Table

- 65 mm fore/aft adjustment to meet individual body size and/or kind of usage: dining, reading, working with laptop
- Integrated cup holder
- Laptop-friendly design
- Easy storage in side covering

Leg support

- For relax seat position up to 45°
- Additional protective covering



Headrest

- Wide headrest for privacy and support

Covering

- Genuine leather for seat-/backrest cushion, leg support and armrest pad

Ergomechanics®

- Best support for spine movement

Lever for seat-/backrest inclination

- Upright position for dining and working
- Relax position for reading and resting

Lever for sleeping position

Ergomechanics® Congress and Award

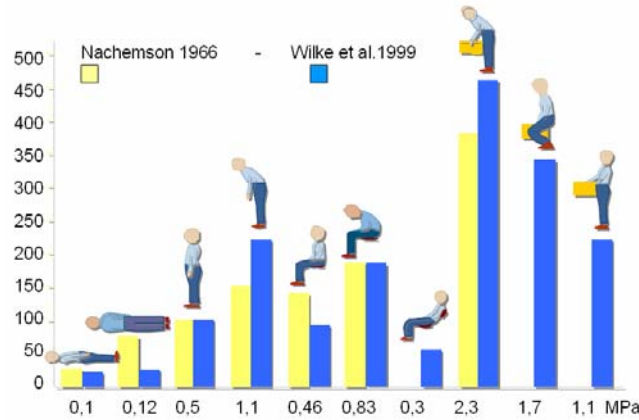


Ergomechanics® Ergonomics...Biomechanics



Pressure of the intervertebraldisc normalized to standing

50's and 60's



1999



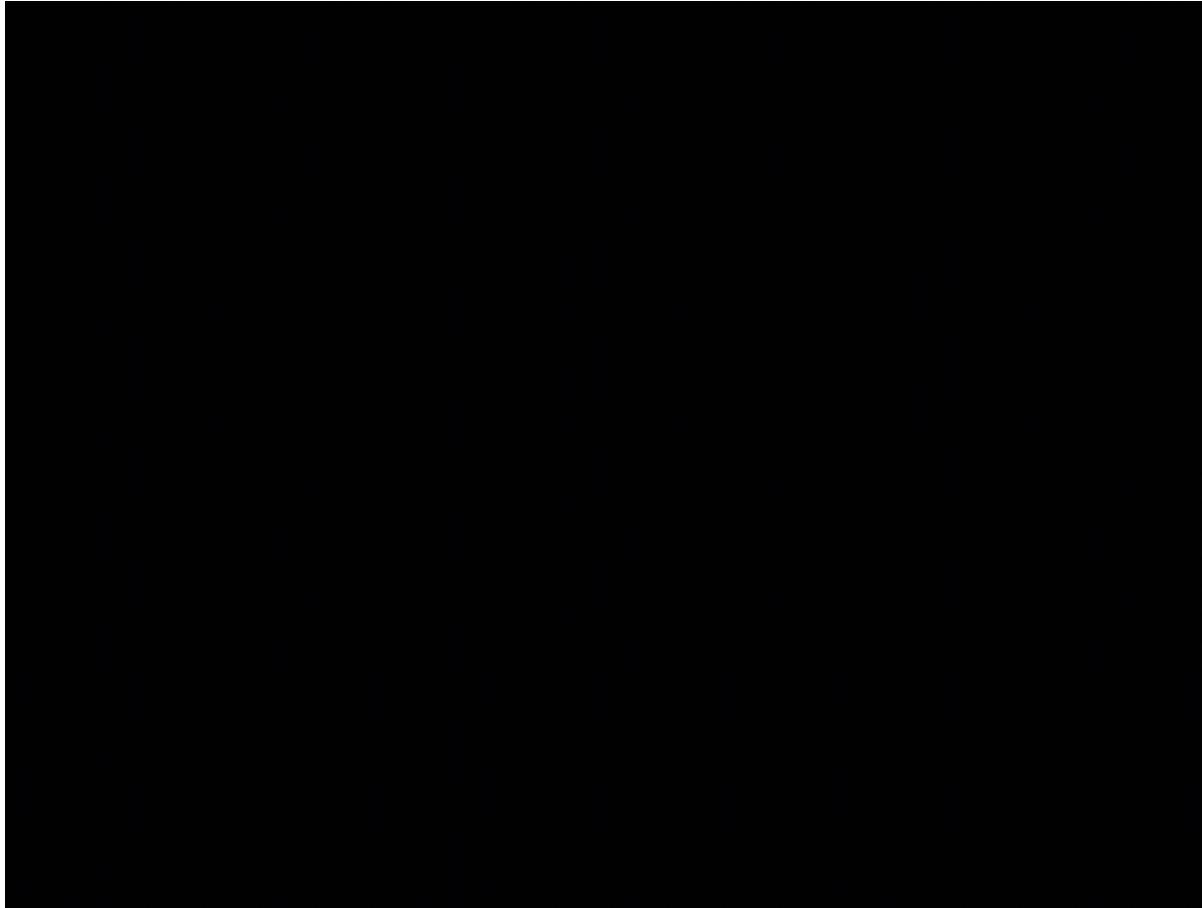
Nachemson, A. (1966), The load on lumbar disks in different positions of the body. Clin Orthop 45: 107-22

Prof. Dr. Hans-Joachim Wilke
Institute of Orthopaedic Research and Biomechanics, University of Ulm

Sensor for measuring pressure in the nucleus of the intervertebral disc L4-L5

Comparison of the intervertebral disc pressure in different sitting and standing postures.

Ergomechanics®
Nutrition of the Intervertebral Disc



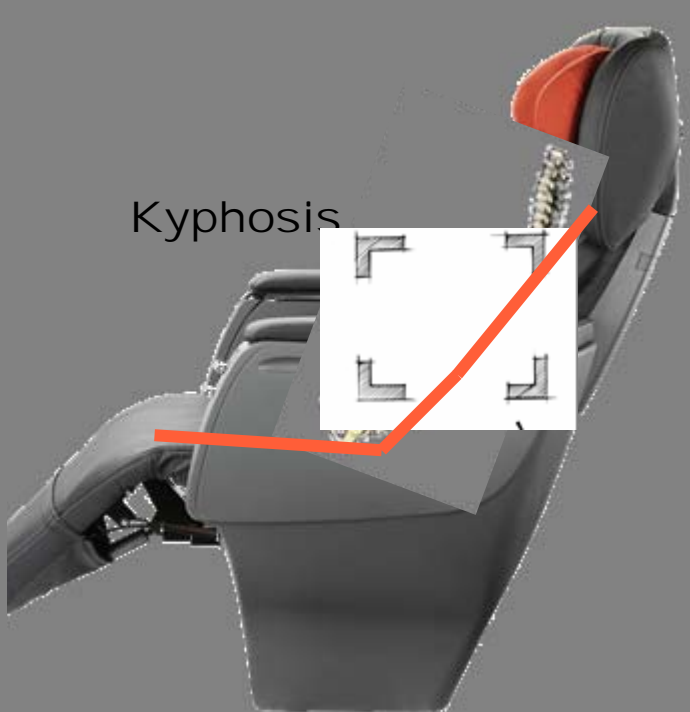
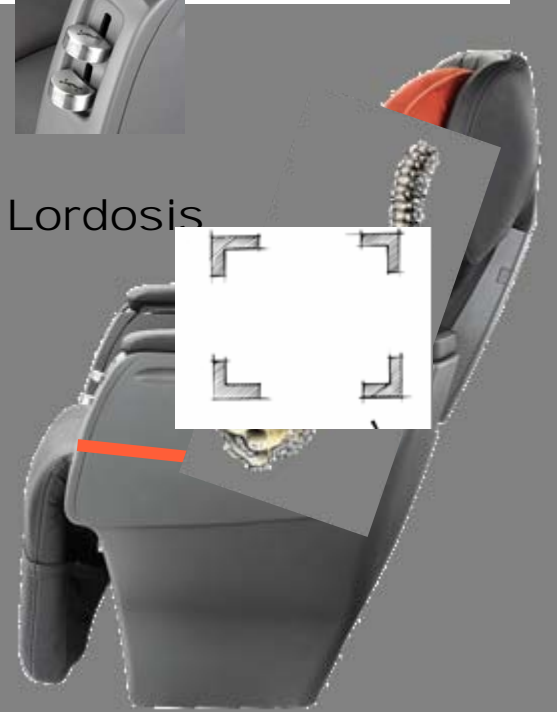
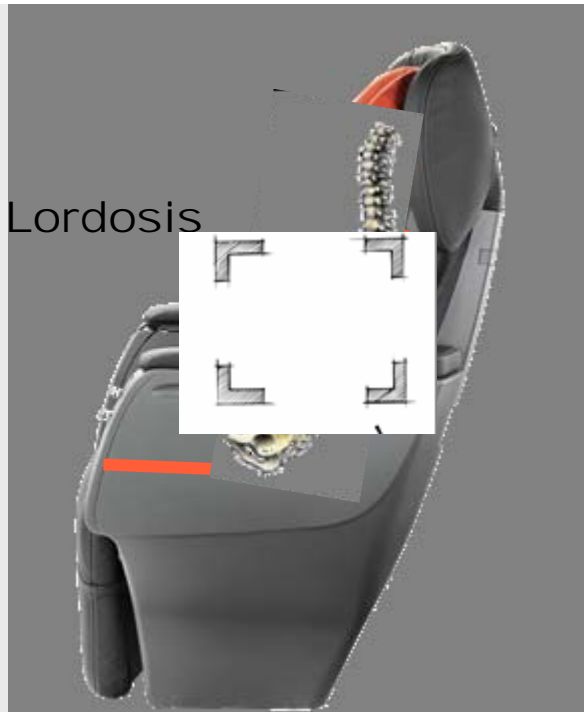
Spine needs movement for the nutrition of the intervertebral discs.

Ergonomics + Biomechanics = 



The physiological movement of the spine in the different sitting positions needs adequate support.

Ergomechanics®
How it works



**Upright seat position
for dining and working**

- Lordosis profile in the backrest
- Angle of backrest: 29°
- Angle of seat: 10°

**Relax seat position
for reading and resting**

- Lordosis profile in the backrest
- Angle of backrest: 43°
- Angle of seat: 16°

**Sleeping seat position
for sleeping**

- Ergomechanics® philosophy inside
- Kyphosis profile in the backrest
- Angle of backrest: 48°
- Angle of seat: 16°

Ergomechanics®
Benefit



Thus the spine discs get the necessary movement and are optimally supported in all sitting positions. Even after hours the passenger will feel rested.

Design for Use



Integrated table

- Easy to use
- Storage in side covering
- Integrated cup holder

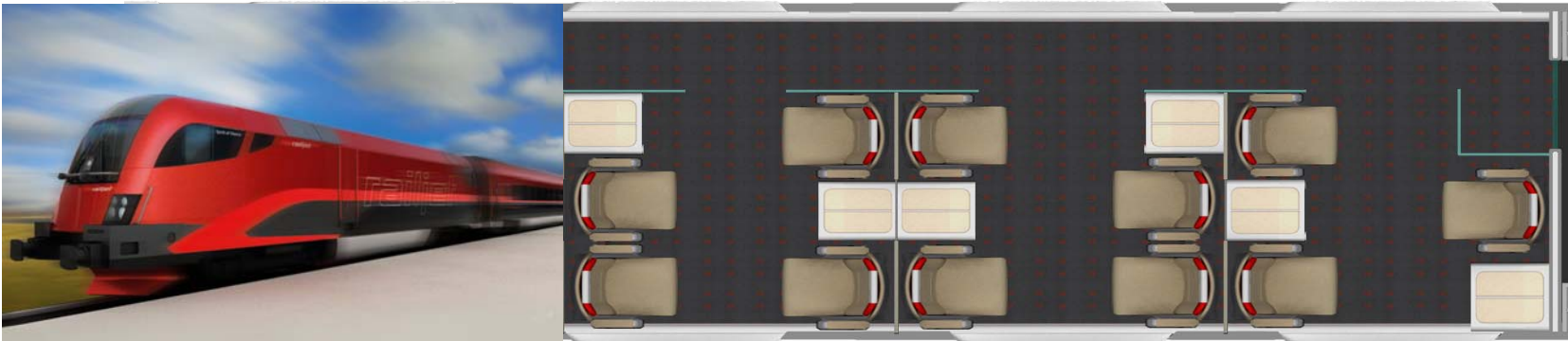
Fore/Aft adjustment

- 65 mm adjustment to body size and/or usage
- Dining
- Reading
- Laptop-friendly



Customer Reference

First Project for the Premium Seat is the Railjet of ÖBB in Austria.



ÖBB *railjet*

Website

Informations regarding the Premium Seat are available on the Grammer homepage

www.grammer.com

during the exhibition.

Views

