RAMSIS
AUTOMOTIVE



RAMSIS Automotive

Nowadays, computer-based manikins are very often used in the development of vehicle interiors, aircraft cockpits, passenger compartments and workplaces. Besides the reduction of product development time spans and development costs, manikins contribute to increasing the quality of the work environment and the user-friendliness and serviceability of the products. RAMSIS is the leading ergonomics tool worldwide and has been used during the development of passenger cars, trucks, aircraft and construction machinery for many years.

RAMSIS Automotive is a CAD manikin especially developed for the ergonomic analysis of cars. Applications range from the ergonomic design of driver and passenger areas to an entire design for efficient preventative and corrective maintenance work. RAMSIS is not only available to the user as a pure CAD application (e.g. integrated into CATIA or as a stand-alone version) - as RAMSIS in VR, this ergonomics system can also be used for extensive real-time tests in the virtual reality laboratories of automotive manufacturers.

Detailed statistic knowledge about persons' body measurements and behavior is absolutely essential if an exact representation of a future „target person" is to be created. Extensive research projects with real persons have enabled the reproduction of widely differing groups of persons and their behavior in a vehicle, and the integration of the subsequent results in RAMSIS databases.

RAMSIS therefore has a wide spectrum of anthropometric data of the most important global regions like for example, Asia, North America and Europe. Easily operable statistical functions enable the generation of digital images of customer groups and their integration into the entire design and product development process.

During the course of extensive experiments, research institutes have analyzed the postures and behavior of persons in a vehicle. Thanks to the embedding of the acquired information into the RAMSIS databases, the posture of the driver can be simulated and realistic forecasts with regard to future room and operating conditions within the vehicle can be made.

Further posture models, like e.g. the standing posture model or the passenger posture model are also available and can be used according to the design process applications required.

After positioning of the RAMSIS manikin in the work environment, the user has widely differing analysis functions to choose from - like the calculation of space and room needs, accessibility envelopes, direct and indirect manikin view and the simulation of posture-contingent maximum available force. These analytical functions provide the user with extensive information about the ergonomic quality of the product and possible critical aspects of the design.

RAMSIS can run on numerous platforms and the software can be easily and efficiently integrated into your development process chain. RAMSIS is available as a stand-alone version on UNIX or Windows platforms and as a fully integrated ergonomics tool in CATIA V4 and V5.

RAMSIS Automotive comes in a Standard and Professional Bundle. For extensive ergonomic design we recommend the Professional Bundle.

Standard Bundle
- One posture prediction model out of: Operator, Passenger, Standing
- Manual adjustment of body posture
- Task editor
- Motion recorder
- One anthropometric database out of: USA/Canada, USA (NHANES III), Mexico, South America, China, Japan/Korea, Germany, France
- Add-on BodyBuilder Basic for statistically evaluated body dimensions
- IGES translator (import and export)
- Basic set of functions for geometry creation and manipulation
- Configuration menu for defining user-specific defaults
- Extensive printing functionalities
- Analyzing functionalities: body dimensions, posture, distances, angles, comfort, reach envelopes of arbitrary body parts, direct view, mirror view, maximum force calculation (hand-arm system)
  ...and much, much more

Professional Bundle
Features the same functionalities as the Standard Bundle plus ...
- Operator, Passenger, and Standing Posture Prediction Models
- BodyBuilder Professional supporting extensive functionality for statistical generation of test manikins
- Functionalities for motion simulation
- Interface to motion capturing systems
- Attach objects to the manikin (e.g. helmet)
- Definition and control of object kinematics
- Maximum force calculation (entire body)
- Hull surface for spatial requirements

Availability of RAMSIS Automotive
Stand-Alone Version & CATIA-integrated
Supported Operating Systems
UNIX - SGI, HP, SUN, IBM / Windows - NT, 2000, ME, XP
System Requirements
Disc Space: 300 MB / Memory: 256 MB RAM, 512 MB Virtual Memory, 3 Button Mouse / Support of Open GL (Libraries or Graphic Card)
Detailed platform-depending requirements on request
More Information
www.ramsis.de / www.human-solutions.com

HUMAN SOLUTIONS
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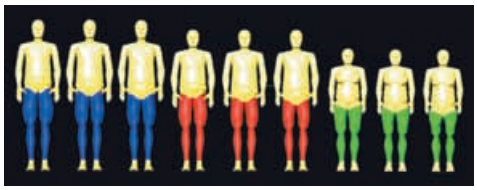
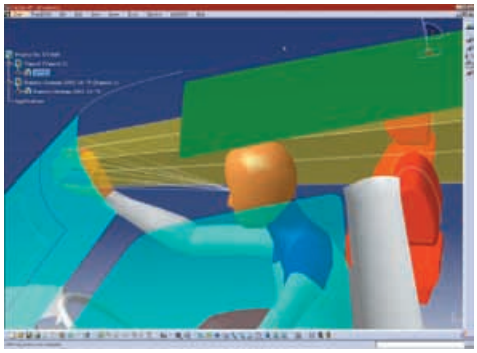
>> RAMSIS Automotive Performance Characteristics

Model Structure
· Wire-frame and surface model display
· Physiologically correct joint representation
· h-Point

Anthropometry
· 90 realistic, statistically correct body types
· Typology according to stature, proportion and corpulence
· International anthropometry databases
· Prognosis of secular growth
· Various shoe models
· Interface for integration of new anthropometry data
· Reproduction of individual persons
· Analysis of body dimensions
· Analysis of body weight and weight distribution



Standard Animation
· Interactive and numerical translation and rotation
· Interactive and numerical joint animation
· Fast, target-based animation for freely definable link chains
· Interactive „dragging" of body parts
· Analysis of body point coordinates and joint angles



Automatic Posture Calculation
· Automatic, task-based calculation of realistic driver postures
· Interactive task definition through easy manipulation and orientation of body parts
· Tasks can be used for multiple manikins
· Automatic calculation of postures for test samples

Health- and Comfort Analysis
· Analysis of Postural comfort
· Posture-dependent assessment of body part comfort
· Fatigue analysis
· Orthopaedic assessment of spinal curvature

Vision Analysis
· Consideration of eye-movement during automatic posture calculation
· Automatic calculation of eye-position considering head and neck movement
· Internal vision
· Ergonomic assessment of field-of-vision
· Consideration of focal disctance
· Simulation of mirror view for planar and spherical mirrors

Seat Belt Analysis
· Simulation of belt routing and calculation of belt length for 2- and 3-point seat belts
· Calculation of first and last point-of-contact

Reach Analysis
· Automatic calculation of reach envelopes for freely definable link chains

Animation
· Quick and easy simulation of motion
· Export of motion files to AVI

RAMSIS STAND-ALONE
· Basic CAD functions
· Built-in IGES and VDA translator

Available Platforms
· Stand-alone Version: HP - SGI - SUN - Windows
· CAD-Integration: CATIA V4 - CATIA V5

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