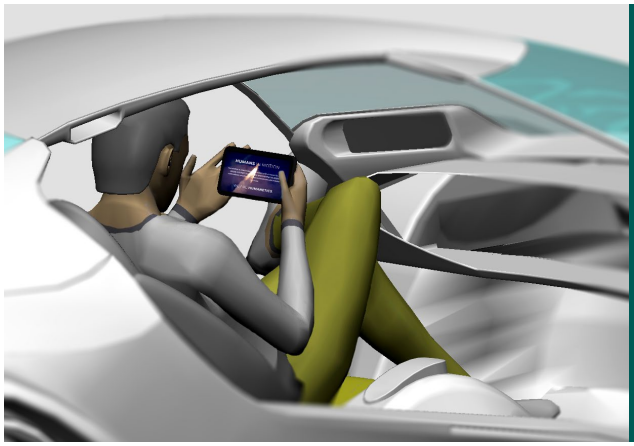
RAMSIS for autonomous vehicles

HUMANETICS



Digital ergonomics

Trend-setting impetus for the interior design of automated vehicles

YOUR BUSINESS FIRST

Ergonomics in autonomous vehicles

Autonomous driving is changing the role of the driver in the vehicle. An exciting process begins when sections of the route are computer-controlled: The driver can do something other than simply drive the vehicle and adopt a different posture, for instance. The passengers also behave differently. RAMSIS offers new posture models for this.

The primary focus used to be on pure vehicle operation – but now communication, perception and behavioral interpretation are playing an increasingly important role. The role of the driver will be different in the future. Posture analysis is impacted by the behavior of autonomous vehicle passengers, and the driver also interacts differently with the vehicle because non-driving activities come to the fore. This is why posture models for the most important non-driving activities have now been integrated into RAMSIS.

Your advantages

- Simulation of occupant behavior for a wide range of relevant non-driving activities (e.g., reading, relaxing...)
- Seamless integration of simulated occupant behavior into the standard RAMSIS process
- Display of the occurrence frequencies of posture combinations in automated vehicles

THE MANIKIN AND ITS POSITIONING

Automatic posture calculation

RAMSIS simulates the most probable posture behavior of vehicle occupants based on current research. In a modern posture study, a large number of important non-driving activities were measured and modeled (e.g., talking on the phone, reading a book or newspaper, eating/drinking, looking at the landscape, working with paper or a laptop, talking to a passenger, relaxing, using a smartphone or tablet), with the result that the virtual subjects all behave realistically. In RAMSIS, tasks can be defined interactively with the simple fixation and orientation of body parts.

Modeling of commodities

With the increase in non-driving activities, the importance of commodities such as smartphones also grows. These can be modeled in RAMSIS and taken into account in the posture prognosis.

The additional activities can be integrated into the ergonomic analysis for safety, belt routing, reachability and free space. This allows you to quickly gain experience in the design of autonomous vehicles - ensuring comfort and safety for all the occupants.

ERGONOMIC ANALYSIS

Direct and indirect vision

Even in automated vehicles, a free field of vision has a massive impact on safety – and also on motion sickness (kinetosis). In RAMSIS, you can analyze the field of vision – directly and via mirrors – inside and outside the vehicle from any position of the occupant.

Belt routing & reachability

New postures are changing how occupant safety is analyzed: With RAMSIS, you can now simulate and evaluate the seat-integrated belt in any position of the occupant (e.g., on the neck). Recommendations for belt anchorage positions can be derived from this.

To ensure the best possible operation, RAMSIS allows you to calculate the reachable areas for important controls in any occupant position.

Free space

The increased variability of activities in an automated vehicle goes hand-in-hand with an increased need for free space for the occupants. You can simulate this free space in a series of extensive activities.

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