Occupant Packaging Toolkit for Jack

Design and test vehicle interiors with digital humans

Benefits

- Assess human needs from design start
- Minimize need for physical prototypes
- Improve performance, comfort and product safety
- Accelerate time-to-market
- Decrease design costs

Features

The Occupant Packaging Toolkit provides tools for:

- SAE packaging J-Standards
- Posture prediction
- Comfort assessment
- Vision analysis

Summary

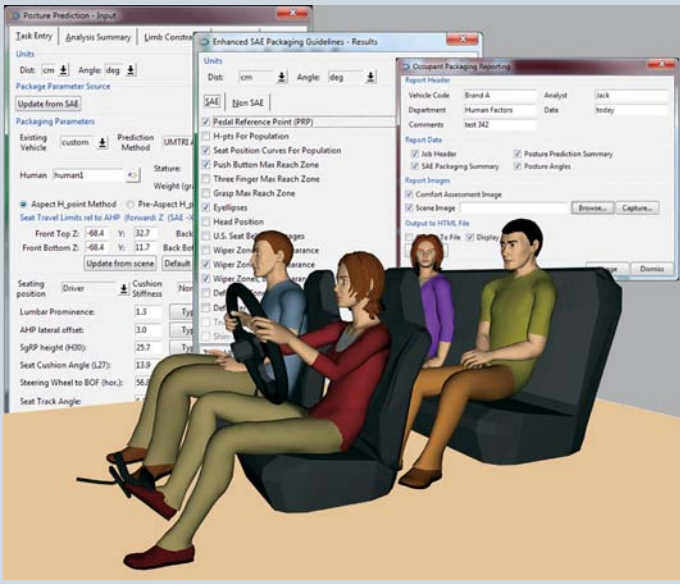
With Tecnomatix® software's Occupant Packaging Toolkit for Jack™, designers can analyze concept vehicle interiors for human factors issues without building costly physical prototypes.

What is the Occupant Packaging Toolkit?

Designing better interior spaces for cars, trucks, airplanes and construction equipment can be a challenge. The Occupant Packaging Toolkit (OPT) for Jack addresses this challenge by providing analytical tools that help you design vehicle interiors for optimal occupant performance and comfort while reducing the need to build costly physical prototypes. OPT is an add-on module to Siemens PLM Software's Jack human simulation and ergonomics analysis solution.

The unique set of tools in the OPT module allows you to perform a wide variety of analyses on your vehicle design. You can benchmark against other vehicles or design candidates using the extensive SAE J-Standards tools. You can predict how a person might posture themselves in the vehicle, and evaluate how comfortable they would be. You can also analyze what they can reach and see.

The powerful vision analysis capability allows you to quickly generate 3D design zones representing what can be seen, or what cannot, and obtain feedback on how much of a target is visible.



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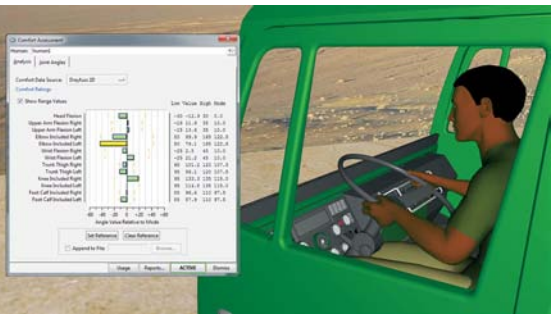
Occupant Packaging Toolkit for Jack

With the Occupant Packaging Toolkit, you can develop more ergonomic, safer and more comfortable vehicle interiors.

Overview
The Jack human simulation solution enables you to insert human models into your digital environments. With the OPT add-on, you can evaluate your digital vehicle concept models for human factors issues. Analyzing vehicle interior concepts while they are still in the preliminary design stage allows designers to bring human factors into the design process sooner, allowing for better ideas and enabling smarter decisions.



With Jack and the OPT, you can interactively evaluate a concept vehicle design for human fit and performance. Since Jack is infinitely scalable, you can create a male or female figure of any desired size, and the OPT functionality will automatically position the figure into the vehicle based on validated research models. You can further investigate your design by using the comfort analysis and vision analysis functionality to improve occupant performance. Using the SAE J-Standards tools, you can benchmark a vehicle design using industry standard tools.

Using the OPT, you will be able to design safer and more optimal vehicle layouts, faster and for less cost.

SAE packaging guidelines
The SAE packaging guidelines tool implements 28 of the SAE recommended practices for various driver and vehicle design attributes. With this tool you can:

- Create geometry in Jack to identify zones where physical features such as eyes, head clearance and fingers would be located for 95 to 99 percent of the population
- Create geometry to identify locations for vehicle attributes such as the seat, steering wheel, armrest, gear shift, wiper and defroster zones
- Evaluate alternate designs just by modifying the critical reference points

Posture prediction
The posture prediction tool helps you place Jack virtual humans in seated postures that represent how people of a particular size actually sit in the seat of a vehicle. Based on empirical studies of hundreds of occupants seated in various vehicle configurations, the tool:

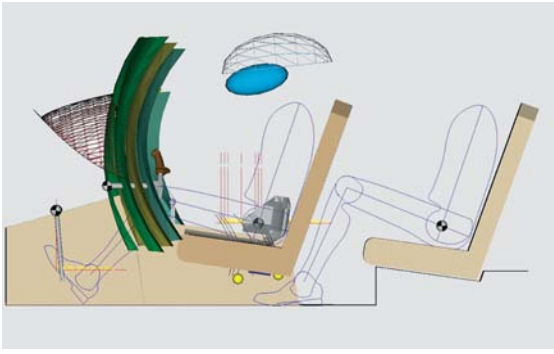
- Predicts the location of the human model within a vehicle package, taking into account the size of the virtual human and the packaging layout
- Automatically positions drivers and passengers in both front and rear seats

Comfort assessment
The comfort assessment tool helps you determine whether you have positioned a human model in a comfortable posture. With five comfort models available to assess seated comfort, the comfort assessment tool:

- Predicts whether a given human model is in a comfortable seated posture
- Dynamically displays the comfort ranges as you position the human model
- Allows you to customize or create your own comfort ranges for individual joints

Vision analysis
The vision analysis tool helps you analyze the line-of-sight issues in the vehicle. The tool allows you to create geometry representative of the direct line-of-sight obscuration zones, the reflection zones and the target visibility within an environment. In addition, the vision analysis functionality allows you to:

- Generate zones that represent boundaries of what can be seen through mirrors, occluded areas behind geometry or portions of targets that can be seen
- Batch process a family of figures to automatically generate population restriction zones



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