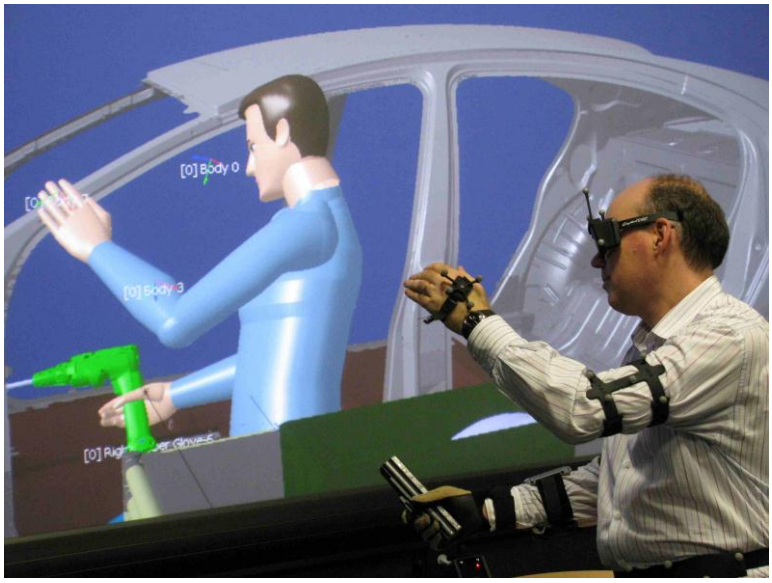
haption VIRTUAL TOUCH

Product|Software

IFC Human

Interactive Fitting for Catia V5 Human Extension



IFC Human "Interactive Fitting for Catia V5 Human extension" is a software add-on to Catia V5™ and IFC Core. It enables interactive real-time simulation with digital human capabilities inside a Digital mockup environment.

Using IFC Human, the users can simulate **manual operations** in:

- ⇒ **Accessibility** testing
- ⇒ **Visibility** study
- ⇒ **Ergonomic** assessment
- ⇒ **Workplace** simulation
- ⇒ **Collaborative work**

The User Benefits are: reduction of the time needed for producing human animations, increased productivity, increased quality, lower development effort.

Key Features

- ⇒ **Easy calibration**
- ⇒ **Stop on collision cues**
- ⇒ **Combination with V5™ KIN mechanisms**

Technical Requirements

- ⇒ Catia V5™, IFC Core
- ⇒ Supported releases: R18/R19/R20/R21/R22
- ⇒ Hardware: valid configuration certified by Dassault Systemes
- ⇒ Haption IPSI Server

Interactive Fitting and simulation

IFC Human extension offers functionality for:

- Simulation set-up
  - Select any kind of manikin present in your Catia Catproduct
  - Activate/deactivate individual joints
  - Identify tools and moving parts
  - Automatically load the 3D data into the interactive physics simulation
- Manipulation device management
  - Optical tracking system for real-time motion capture; currently supported are ART™, VICON™, MotionAnalysis™, and Trackd™
  - Inertial Sensor: Xsens™
  - Cyberglove™ for hand of the manikin

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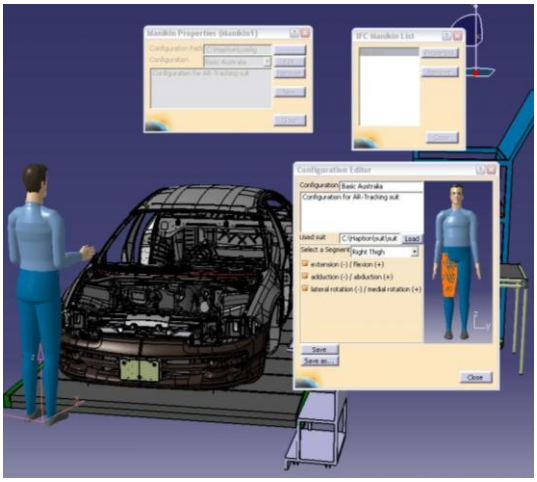
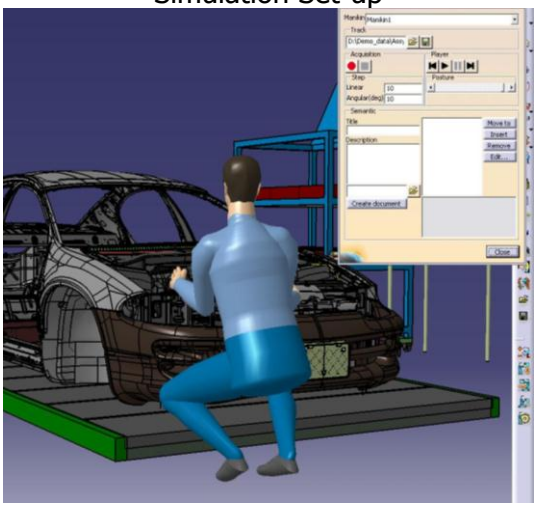
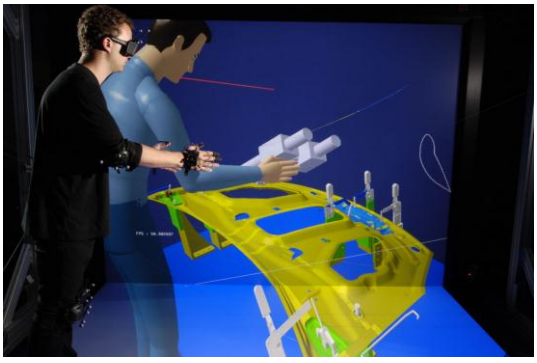


Simulation Set-up



Track Tools



Virtual Reality

- 6D mouse from 3Dconnexion
- Haption's force-feedback devices Virtuose and Inca

- Simulation process control
  - Start, stop, pause, resume
  - Attach/detach manipulation devices to 3D objects
  - Automatically calibrate the operator using motion tracking equipment, attach/detach the virtual manikin with one click
- Real-time physics simulation
  - Scale the operator's movements to the virtual manikin
  - Integrate the virtual manikin's kinematics, including joint limits
  - View collisions and stop/glide/pivot on contact point
  - Update the Catia viewer in real-time
  - Animate up to 4 manikins simultaneously
- Simulation capture and recording
  - Record the virtual manikin's postures as joint angles in real-time
  - Create a XML based file with the recorded postures, for later replay and analysis (posture by posture)

Real Time Movement and Kinematics Constraints

IFC Human's constraint-based solver drives the Catia V5™ manikin in real-time without inverse kinematics, thus generating more accurate and realistic postures.

Real-Time Recording Trajectory

Using IFC Human, you can record the postures of the manikin as in an XML file, and use standard Catia Human functions to edit, and analyse posture.

IFC Human and Virtual Reality

Combine IFC Human with a stereoscopic display such as Head Mounted Display (HMD) or projection system (Cadwall, CAVE™) for a unique, fully immersive experience! With the new scripting functionality of IPSI, you can even drive the whole simulation session from the VR environment.

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