

# Prototype Human Model for the Evaluation of a Crew Transportation Module

**ABSTRACT:** This paper details the design and implementation of a prototype human model for use in evaluation of a Crew Transportation Module for a Reusable Launch Vehicle design. This human model allows the user to use a combination of immersive and non-immersive techniques for ergonomic evaluations. The human model presented in this paper has the following functionalities: free floating (each body part is uninfluenced by other body parts), scalable (the parametric nature allows for scaling of each individual body part), calibration of body parts (to account for error in the mounting of the tracking devices to the body parts), gripping methods, multiple body part tracking configurations, predefined sitting and standing postures, mouse-based manipulation of human model, and dynamic switching between first and third person views. The overall goal was to create a scaleable human model software system which could be easily included in any immersive or non-immersive graphics application. This human model was inserted into a MuSETM-based environment. The methods used to create this human model and its salient features as well as its shortcomings are discussed in this paper.