ICT Methodologies to Model and Simulate Parts of Human Body for Prosthesis Design

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Abstract.

The work presented in this paper refers to the implementation of a product development process based on the use of virtual model of the human body to design specific custom-fit product, such as a prosthesis socket (interface between the residual limb and the mechanical part of the prosthesis). It considers the integration of advanced ICT tools coming from the reverse engineering, the physics-based modelling and simulation, and the rapid prototyping fields. The paper describes problems related to the implementation of each step within a real socket development process.

Keywords: Product customization, Prosthesis design, Physics-based simulation, Human body modeling.