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SOOMA - Software for acquisition and storage of anthropometric data automatically extracted from 3D digital human models

Autores: Pastura, F.C.H., Costa, T.F., de Aguiar Mendonça, G., Zamberlan, M.C.P.L.

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Abstract: SOOMA is a software tool developed by Laboratório de Ergonomia (LABER) of the Instituto Nacional de Tecnologia (INT) of Brazil for use in projects involving anthropometric characterization of the human body. Its main objective is to automate the location of body landmarks and calculation of anthropometric measurements based on digital human models generated by 3D laser scanning. SOOMA was designed as a modular application, allowing implementation of algorithms for landmarks location and anthropometric measurements calculation independent of the graphical user interface responsible for controlling user interaction. Data and files are stored in a local database immediately after production. Optionally, stored data and files may be copied to a centralized document management system that provides long term preservation and decentralized access by registered users. The Control module is a *C#* windows application and the local database is an opensource database. Currently, the Script module is based on *R* but other algorithm execution tools can be used. Opensource software *LogicalDOC* is used as document management system and some specialized functions for visual verification of landmark location and 3D pdf generation depend on additional opensource tools (*CloudCompare*, *Meshlab* and *Miktex*).